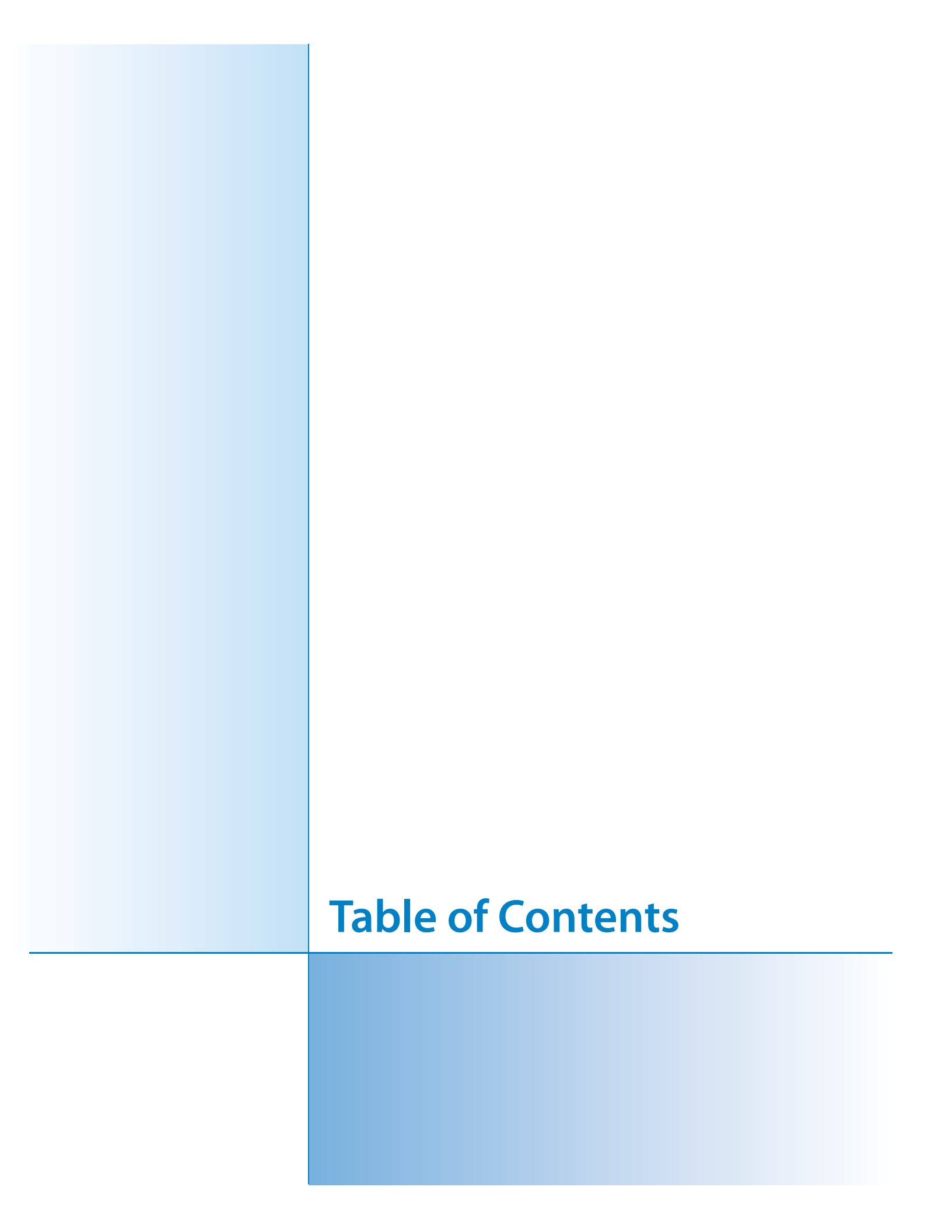




## *Final Energy Audit Report*

Wall Township Board of Education  
November 30, 2012



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# Table of Contents

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## Executive Summary

## Executive Summary

As part of an initiative to reduce energy cost and consumption, the Wall Township Board of Education has secured the services of CDM Smith to perform an energy audit for five (5) facilities which are owned and operated by the Board in an effort to develop comprehensive Energy Conservation and Retrofit Measures (ECRMs).

CDM Smith's energy audit team visited the facilities July 11 and July 12, 2012. As a result of the site visit and evaluation of the historical energy usage of the facilities, CDM Smith was successful in identifying opportunities for energy savings measures.

CDM Smith has also evaluated the potential for renewable energy technologies to be implemented at the Board's facilities to offset the electrical energy usage. Specifically, the use of solar electric photovoltaic panels, ground source heat pumps and wind turbines were investigated.

Potential energy cost savings may be available for the Board through the use of a third party electric or gas supplier. Additionally, there is potential for the Board to make money by participation in a Demand Response Program, as discussed in Section 5.2.

Not all ECRMs identified as a result of the energy audit are recommended. ECRMs must be economically feasible to be recommended to the Board for implementation. The feasibility of each ECRM was measured through a simple payback analysis. The simple payback period was determined after establishing the following:

- Engineer's Opinion of Probable Construction Cost estimates
- Operation and Maintenance (O&M) cost estimates
- Projected annual energy savings estimates
- Potential value of New Jersey Clean Energy rebates
- Renewable Energy Credits, if applicable

ECRMs with a payback period of 20 years or less can be recommended.

## Historical Energy Usage

The following table, Table ES-1, summarizes the historical energy usage at each of the Board's facilities as presented in Section 3. The data in Table ES-1 has been taken from the facility data forms, provided by the Board. These values can serve as a bench-marking tool, along with the building profiles that have been established through the EPA's Portfolio Manager Program. These tools can quantify the reduction in electrical energy and natural gas usage following the implementation of the recommended ECRMs.

| Table ES-1<br>Summary of Annual Energy Usage & Cost |                                   |                                  |                                  |                                                   |                                 |                  |
|-----------------------------------------------------|-----------------------------------|----------------------------------|----------------------------------|---------------------------------------------------|---------------------------------|------------------|
|                                                     | Electrical<br>Energy Use<br>(kWh) | Peak<br>Summer<br>Demand<br>(kW) | Peak<br>Winter<br>Demand<br>(kW) | Fuel Use<br>for<br>Entire<br>Building<br>(therms) | Cost for<br>Electric<br>Service | Cost for<br>Fuel |
| Wall High School                                    | 2,648,000                         | 667                              | 658                              | 125,813                                           | \$388,203                       | \$76,534         |
| Central Elementary School                           | 491,520                           | 178                              | 137                              | 56,328                                            | \$74,370                        | \$33,098         |
| Wall Intermediate School                            | 1,576,884                         | 394                              | 482                              | 145,215                                           | \$222,022                       | \$79,968         |
| Allenwood Elementary School                         | 407,570                           | 139                              | 106                              | 26,095                                            | \$61,706                        | \$16,754         |
| Old Mill Elementary School                          | 736,302                           | 209                              | 159                              | 80,855                                            | \$105,807                       | \$42,326         |

## Recommended ECRMs

The following Table ES-2 presents the ranking of recommended ECRMs identified for the building lighting and HVAC systems based on the simple payback analysis.

Additional ECRMs associated with the building envelope and other miscellaneous appliances were identified and evaluated, as discussed in Sections 2 and 4. However, these ECRMs were not recommended due to longer payback periods. This table includes the Engineer's Opinion of Probable Construction Cost. Projected annual energy cost savings, projected annual energy usage savings, and total simple payback period for each recommended ECRM are also included. The ECRMs are ranked based on payback period.

| Table ES-2 <sup>1</sup><br>Ranking of Energy Savings Measures Summary |                                                  |            |                               |                                          |                              |
|-----------------------------------------------------------------------|--------------------------------------------------|------------|-------------------------------|------------------------------------------|------------------------------|
| Overall Ranking<br>(Based on Simple<br>Payback)                       | Facility<br>Measure                              | Total Cost | Energy Savings                | Annual<br>Fiscal<br>Savings <sup>2</sup> | Simple<br>Payback<br>(Years) |
| 1                                                                     | Old Mill Elementary School<br>Lighting Upgrades  | \$28,961   | 82,057 kwh                    | 12,018                                   | 2.1                          |
| 2                                                                     | Wall High School<br>Lighting Upgrades            | \$79,405   | 220,538 kwh                   | 29,294                                   | 2.2                          |
| 3                                                                     | Central Elementary School<br>Lighting Upgrades   | \$23,323   | 57,523 kwh                    | 8,050                                    | 2.4                          |
| 4                                                                     | Old Mill<br>HVAC Occ Sensor                      | \$88,000   | 20,500. Therms<br>64,850 kWh  | 32,074                                   | 2.7                          |
| 5                                                                     | Allenwood Elementary School<br>Lighting Upgrades | \$35,147   | 61,716 kwh                    | 9,054                                    | 3.4                          |
| 6                                                                     | Wall Intermediate School<br>Lighting Upgrades    | \$82,258   | 163,104 kwh                   | 20,444                                   | 3.4                          |
| 7                                                                     | High School<br>HVAC Occ Sensor                   | \$180,000  | 12,200. Therms<br>142,000 kWh | 35,458                                   | 5.1                          |

| Table ES-2 <sup>1</sup>                         |                                              |            |                              |                                          |                              |
|-------------------------------------------------|----------------------------------------------|------------|------------------------------|------------------------------------------|------------------------------|
| Ranking of Energy Savings Measures Summary      |                                              |            |                              |                                          |                              |
| Overall Ranking<br>(Based on Simple<br>Payback) | Facility<br>Measure                          | Total Cost | Energy Savings               | Annual<br>Fiscal<br>Savings <sup>2</sup> | Simple<br>Payback<br>(Years) |
| 8                                               | <b>Allenwood</b><br>HVAC Occ Sensor          | \$80,000   | 5,452. Therms<br>45,970 kWh  | 14,538                                   | 5.5                          |
| 9                                               | <b>Old Mill</b><br>Hot Water VFD Control     | \$7,300    | -500. Therms<br>12,080 kWh   | 1,181                                    | 6.2                          |
| 10                                              | <b>Intermediate</b><br>Boiler Upgrade        | \$187,500  | 21,000. Therms<br>kWh        | 23,520                                   | 7.8                          |
| 11                                              | <b>Old Mill</b><br>Boiler Upgrade            | \$187,500  | 20,760. Therms<br>kWh        | 23,044                                   | 8.0                          |
| 12                                              | <b>Intermediate</b><br>Wall Insulation       | \$252,000  | 14,500. Therms<br>68,000 kWh | 25,814                                   | 9.8                          |
| 13                                              | <b>Intermediate</b><br>Hot Water VFD Control | \$7,300    | -300. Therms<br>7,200 kWh    | 678                                      | 10.8                         |
| 14                                              | <b>Intermediate</b><br>HVAC Occ Sensor       | \$138,000  | 8,900. Therms<br>-16,500 kWh | 7,645                                    | 18.1                         |
| 15                                              | <b>Old Mill</b><br>Window Upgrade            | \$99,809   | 2,900. Therms<br>13,520 kWh  | 5,162                                    | 19.3                         |
| 16                                              | <b>Allenwood</b><br>Wall Insulation          | \$157,648  | 3,275. Therms<br>20,700 kWh  | 7,686                                    | 20.5                         |
| 17                                              | <b>High School</b><br>Boiler Upgrade         | \$210,000  | 7,900. Therms<br>kWh         | 9,480                                    | 21.0                         |

1. Engineers Probable Construction Cost takes into account any applicable rebates.

2. Annual Fiscal Savings takes into account additional O&M cost or savings associated with the measure.

## Renewable Energy Technologies

### Solar Energy

Section 4 of the report provides for an economic evaluation of a solar energy system recommended to be installed at several of the Board facilities. The evaluation covered the economic feasibility of the Board installing a solar energy system under a typical construction contract and to assume full responsibility of the operation of such a system.

Based on a simple payback model, summarized in Table ES-3, it would not benefit the Board to further investigate the installation of a solar energy system at the six buildings. This is primarily based on the initial upfront capital investment required for a solar energy system installation, negative NPV, and the 21.9 year payback period. Other options such as Power Purchase Agreements are potentially available as well to help finance the project. Solar technology is constantly changing and will most likely continue to lower in price.

Two major factors influencing the project financial evaluation is the variance of the prevailing energy market conditions and Solar Renewable Energy Credit (SREC) rates. The largest impact to the payback



model is the SREC pricing. For the payback model, conservative estimates of the SREC's market value over a 25 year period were assumed, as discussed in Section 4.

Table ES-3 includes a simple payback analysis for the installation of a solar energy system at the identified Board buildings. See section 4 for additional information.

| <b>Table ES-3</b>                                       |              |
|---------------------------------------------------------|--------------|
| <b>Simple Payback Analysis for Solar Energy Systems</b> |              |
| Estimated Budgetary Project Cost                        | \$35,810,036 |
| 1 <sup>st</sup> Year Production                         | 3,649,861.1  |
| Annual Electric Savings                                 | \$537,430    |
| Annual Estimated SREC Revenue                           | \$1,094,958  |
| Project Simple Payback (Years)                          | 21.9         |

## Wind Power Generation

Section 4 of the report provides for an economic evaluation of a wind turbine energy system recommended to be installed at the Board's facilities. The evaluation covered the economic feasibility of furnishing and installing a wind turbine energy system under a typical construction contract and to assume full responsibility of the operation of such a system.

CDM Smith completed a preliminary desktop wind power production analysis and has concluded that an additional on-site feasibility study is not warranted or recommended. For informational purposes, a feasibility study would include the installation of a wind test rig to measure actual wind conditions as observed on-site.

Wind power as a renewable energy source also qualifies for Renewable Energy Certificates (REC's). The prevailing energy market, Renewable Energy Incentive Program (REIP) and REC's comprise the major factors influencing a wind turbine energy system installation. Other options, such as government bonds or a Power Purchase Agreement are potentially available and can assist with the financing of this project.

Table ES-4 includes a typical simple payback analysis for the installation of a wind turbine energy system located within the Board's borders. Refer to Appendix K for a more detailed wind energy financing spreadsheet.

| <b>Table ES-4</b>                                                              |                                                                     |                                                                     |                                                                     |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Ranking of Energy Savings Measures Summary – Wind Turbine Energy System</b> |                                                                     |                                                                     |                                                                     |
| <b>Parameter</b>                                                               | <b>Wind Turbine<br/>(Minimum Site<br/>Wind Speed – 4.4<br/>m/s)</b> | <b>Wind Turbine<br/>(Maximum Site<br/>Wind Speed – 6.4<br/>m/s)</b> | <b>Wind Turbine<br/>(Average Site<br/>Wind Speed – 5.5<br/>m/s)</b> |
| Engineer's Opinion of Probable Cost                                            | \$450,000                                                           | \$450,000                                                           | \$450,000                                                           |
| Renewable Energy Incentive Program **                                          | \$0                                                                 | \$0                                                                 | \$0                                                                 |
| Total Cost                                                                     | \$450,000                                                           | \$450,000                                                           | \$450,000                                                           |
| 1 <sup>st</sup> Year Production                                                | 77,954.0                                                            | 158,179.0                                                           | 124,628.0                                                           |

| Table ES-4<br>Ranking of Energy Savings Measures Summary – Wind Turbine Energy System |                                                           |                                                           |                                                           |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Parameter                                                                             | Wind Turbine<br>(Minimum Site<br>Wind Speed – 4.4<br>m/s) | Wind Turbine<br>(Maximum Site<br>Wind Speed – 6.4<br>m/s) | Wind Turbine<br>(Average Site<br>Wind Speed – 5.5<br>m/s) |
| Annual Estimated Electric Savings                                                     | \$11,693                                                  | \$23,727                                                  | \$18,694                                                  |
| Annual Estimated REC Revenue                                                          | \$1,949                                                   | \$3,954                                                   | \$3,116                                                   |
| Project Simple Payback (Years)                                                        | <b>33.0</b>                                               | <b>16.3</b>                                               | <b>20.6</b>                                               |

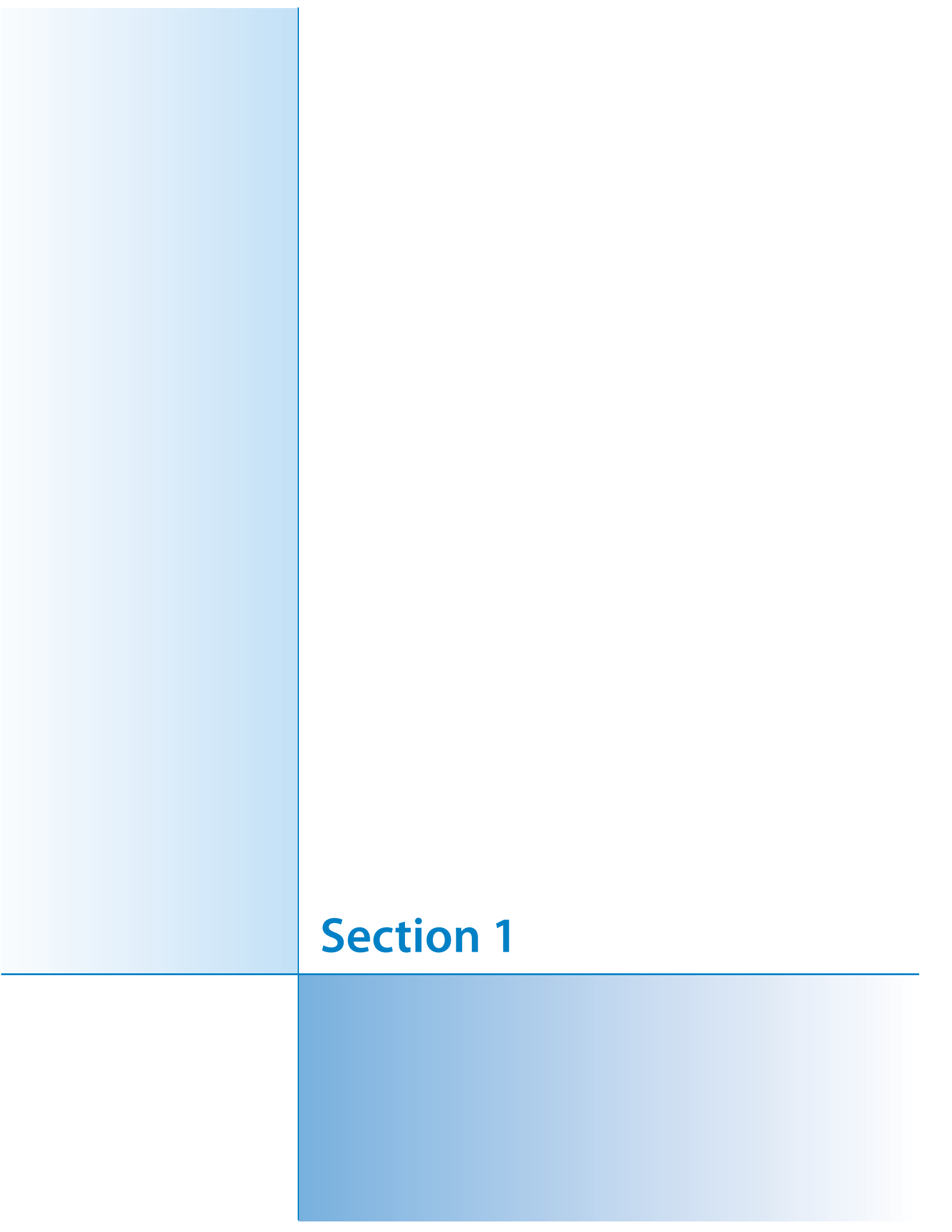
\*\* REIP incentive is calculated for only the first year and is applied as a deduction.

### Recommended ECRMs

Table ES-5 summarizes the Total Engineer's Opinion of Probable Construction Cost, annual energy savings, projected annual energy, and O&M cost savings and the payback period based on the implementation of all of the above recommended ECRMs.

| Table ES-5<br>Recommended ECRM's <sup>1</sup>             |                                    |                                       |                                     |
|-----------------------------------------------------------|------------------------------------|---------------------------------------|-------------------------------------|
| Total Engineer's Opinion of Probable<br>Construction Cost | Projected Annual Energy<br>Savings | Projected<br>Annual Fiscal<br>Savings | Simple<br>Payback<br>Period (years) |
| \$638,694                                                 | 40,960 Therms<br>604,218 kWh       | \$98,393                              | 6.5                                 |

1. Does not include energy savings associated with Solar Energy System or Wind Power Generation.

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## Section 1

# Section 1

## Introduction

### 1.1 General

As part of an initiative to reduce energy cost and consumption, the Wall Township Board of Education has secured the services of CDM Smith to perform an energy audit at five (5) facilities in an effort to develop comprehensive energy conservation initiatives.

The performance of an Energy Audit requires a coordinated phased approach to identify, evaluate, and recommend energy conservation and retrofit measures (ECRM). The various phases conducted under this Energy Audit included the following:

Gather preliminary data on all facilities;

Facility inspection;

Identify and evaluate potential ECRMs and evaluate renewable/distributed energy measures;

Develop the energy audit report.

Figure 1-1 is a schematic representation of the phases utilized by CDM Smith to prepare the Energy Audit Report.

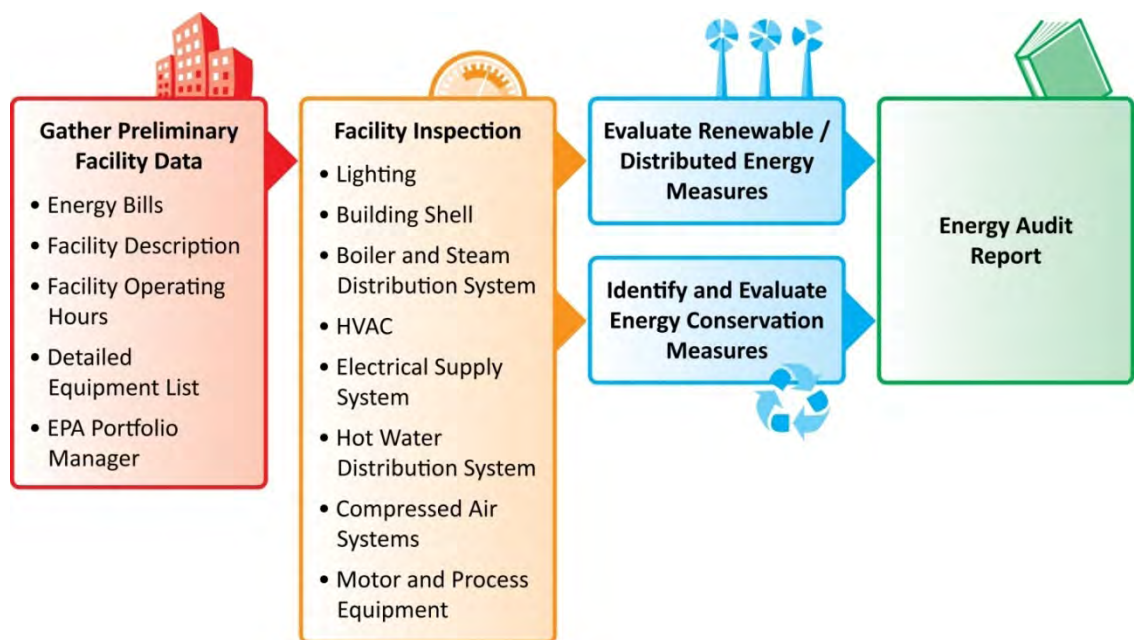


**Figure 1-1: Energy Audit Phases**

## 1.2 Background

The facilities that were included in the energy audit for the Wall Township Board of Education were:

- Wall High School
- Wall Intermediate School
- Old Mill Township Elementary School
- Allenwood Elementary School
- Central Elementary School

The Wall High School was constructed in 1959 with an addition added in 1999. The school totals approximately 186,340 square feet. It is normally occupied during the hours of 6:00am to 11:00pm from Monday to Friday by 1418 students.

The Wall Intermediate School was constructed in 1970's and is approximately 126,000 square feet. It is normally occupied during 6:00am to 11:00pm from Monday to Friday by 1005 students.

The Old Mill Township Elementary School was constructed in 1960 and is approximately 56,440 square feet. It is normally occupied during 6:00am to 8:00pm from Monday to Friday by 507 students.

The Allenwood Elementary School was constructed in 1953 and is approximately 49,920 square feet. It is normally occupied during 6:00am to 8:00pm from Monday to Friday by 466 students.

The Central Elementary School was constructed in 1950's and is approximately 56,110 square feet. It is normally occupied during 6:00am to 8:00pm from Monday to Friday by 618 students.

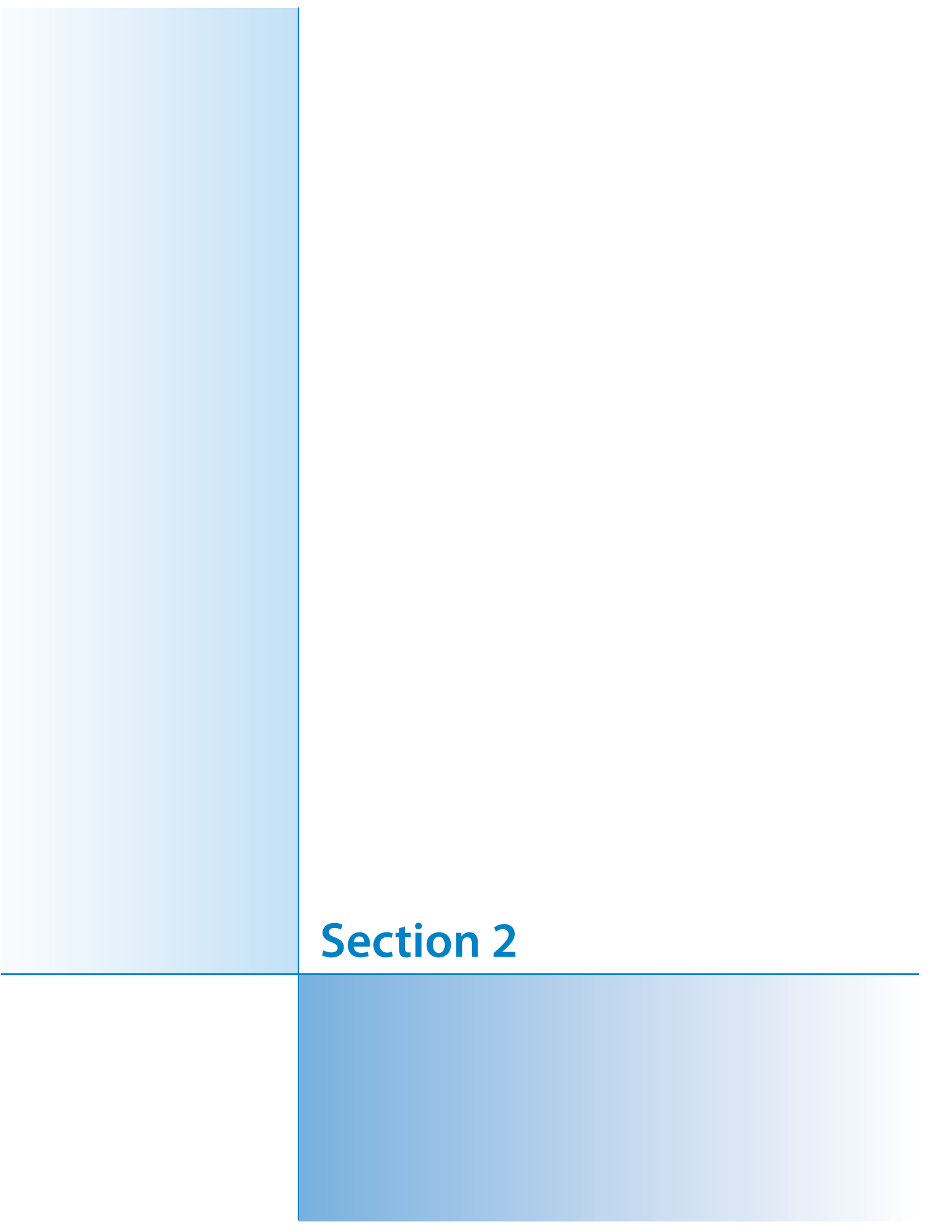
## 1.3 Purpose and Scope

The objective of the energy audit is to identify energy conservation and retrofit measures to reduce energy usage and to develop an economic basis to financially validate the planning and implementation of identified energy conservation and retrofit measures.

Significant energy savings may be available with retrofits to the heating and cooling systems, and lighting systems. Changing building occupancy schedules and consolidating afterschool activities can also generate significant savings. It should be noted that the magnitude of energy savings available is not only dependent on the type of heating, lighting, or insulation systems in use, but also on the age and condition of the equipment and the capital available to implement major changes. Due to the rising cost of power and the desire to minimize dependence on foreign oil supplies, energy consumption is taking a higher priority across the nation and feasible alternatives for reducing energy consumption and operating costs must be evaluated on a case-by-case basis.

The purpose of this energy audit is to identify the various critical building comfort systems that are major consumers of electrical energy and are clear candidates for energy savings measures. In addition, potential energy producing systems such as solar electric, ground source heat pumps, and wind energy systems were also evaluated. A discussion on these technologies is included in Section 4, Energy Conservation and Retrofit Measures (ECRM).

In addition to identifying ECRMs and the potential for on-site energy generation, there is potential for further energy cost savings through the use of a third party energy supplier and participation in a Demand Response Program. This is discussed further in Section 5.

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## Section 2

## Section 2

# Facility Description

### 2.1 Allenwood Elementary School

#### 2.1.1 Description of Building Envelope

The energy audit included an evaluation of the building's envelope (exterior shell) to determine the components' effective R-values to be utilized in the building model, and to locate and fix any thermal weaknesses that may be present. The components that make up a building envelope include the exterior walls, foundation, and the roof. The construction and material, age, and general condition of these components, including exterior windows and doors, impact the building's energy use.

Allenwood Elementary School was built around 1953, and the building is comprised of a brick exterior with a drywall interior. The original building façade is brick, and the roof is sloped with asphalt shingles. The building appears to have multiple additions, and the walls of the new section of the school are CMU with a brick façade. The roof of the addition is flat with a bitumen roll finish.

The interior surfaces of the Allenwood Elementary School are a mix of drywall, plaster, and painted CMU. The building staff reported 2-1/2 inches of polyisocyanurate insulation in the roof, which equates approximately to an R-19 insulation value.

The windows in the building are all aluminum framed double pane, which were observed to be in good condition. A majority of the exterior doors have been replaced with metal replacement doors, and are in good condition. Some older wood doors still remain, which have had new weather stripping installed on them.

The building walls do not appear to be insulated to current energy code standards, and a major project to improve the building insulation values would probably not be cost effective. Incorporating insulation improvements into renovations is a cost effective incremental solution.

#### 2.1.2 Description of Building HVAC

The heating system is comprised of unit ventilators with hot water coils and radiators. The unit ventilators are controlled by DDC thermostats in each space. The unit ventilators, radiators, and air handlers are supplied with hot water by a central boiler plant, which consists of two gas fired hot water boilers. The boilers are a Cleaver Brooks, CB-100-102, fire tube boiler rated at 400 MBH input, and an HB Smith 28A-10, cast iron sectional boiler rated at 3172 MBH input. The boilers are from 1989 and 2000 respectively.

The building is mostly air conditioned using split systems and packaged rooftop units. The areas that are cooled are the library, offices and classrooms with special needs.

The building is thermostatically controlled by a central DDC system. These systems incorporate a temperature setback and shut off the outdoor air to the spaces.

Domestic hot water is produced by two storage water heaters. The first storage water heater is located in the boiler room and rated at 4500 watts, and 80 gallons of storage. The second storage water heater is located in the custodial closet and rated 1500 watts and 30 gallons of storage. Both of these units are made by AO Smith and were installed in 1994.

### 2.1.3 Description of Building Lighting

The existing interior lighting system consists of 2X2 2 lamp, 1X4 1, 2, and 4 lamp, 2X4 2, 3, and 4 lamp T8 linear fluorescent fixtures with electronic ballasts, incandescent, and high intensity discharge (HID) fixtures. Existing exterior lighting consists of HID wall packs. Refer to Section 4 for a more detailed description.

## 2.2 Central Elementary School

### 2.2.1 Description of Building Envelope

The Central Elementary School was built around 1950, and is comprised of a brick exterior with drywall interior. The original building is comprised of brick on block walls with a sloped roof with asphalt shingles. The building appears to have multiple additions, in which the walls are comprised of CMU walls with a brick façade. The roof of the addition is flat with bitumen roll and/or EPDM roll finish.

The interior surfaces of the Central Elementary School are a mix of drywall, plaster, and painted CMU. The building staff reported 2-1/2 inches of polyisocyanurate insulation in the roof, which equates approximately to an R-19 insulation value.

The windows in the building are all aluminum framed double pane, observed to be in good condition. The majority of exterior doors have been replaced with metal exterior doors, which are also in good condition.

The building walls do not appear to be insulated to current energy code standards, and a major project to improve the building insulation values would probably not be cost effective. Incorporating insulation improvements into renovations is a cost effective incremental solution.

### 2.2.2 Description of Building HVAC

The heating system is comprised of DDC thermostatically controlled unit ventilators with either hot water or steam coils and/or radiators. The unit ventilators, radiators, and air handlers are supplied with hot water by a central boiler plant, which consists of two HB Smith, cast iron steam boilers. Each boiler is a 450L rated at 2487 MBH output. These boilers are over 30 years old. The building still has some pneumatic controls.

The building is mostly air conditioned. The unit ventilators have dx coils for cooling. The larger rooms have roof top units that provide heating and cooling, which range from 5 to 15 tons cooling and 90 to 250 MBH heating input.

The building is controlled by a central DDC system. These systems are programmed to perform a temperature setback and shut off the outdoor air to the spaces.



### 2.2.3 Description of Building Lighting

Existing interior lighting system consists of 2X2 2 lamp, 1X4 2 lamp, 2X4 2 and 3 lamp T8 linear fluorescent fixtures with electronic ballasts, compact fluorescent, incandescent, and high intensity discharge (HID) fixtures. Refer to Section 4 for a more detailed description.

## 2.3 Old Mill Elementary School

### 2.3.1 Description of Building Envelope

The Old Mill Elementary School was constructed around 1960, and is comprised of a brick exterior with a painted block interior, and the original roof is flat with bitumen roll surface. The building has an addition that was built in 2000, which is comprised of CMU walls with a brick façade. The roof of the addition is flat with EPDM membrane finish.

The interior surfaces of the Central Elementary School are a mix of drywall, plaster, and painted CMU. The building staff reported 2-1/2 inches of polyisocyanurate insulation in the roof, which equates approximately to an R-19 insulation value.

The windows in the building are all aluminum framed double pane, observed to be in good condition. The majority of exterior doors have been replaced with metal exterior doors, which are also in good condition.

The building walls do not appear to be insulated to current energy code standards, and a major project to improve the building insulation values would probably not be cost effective. Incorporating insulation improvements into renovations is a cost effective incremental solution.

### 2.3.2 Description of Building HVAC

The heating system is comprised of unit ventilators with hot water coils and radiators. The classrooms are conditioned by unit ventilators, which are controlled by pneumatic thermostats in each space. The gym is heated by air handlers with hot water coils. The unit ventilators, radiators, and air handlers are supplied with hot water by a central boiler plant, which consists of two gas fired hot water boilers. The boilers are HB Smith, cast iron, 450 Mills rated at 3582 MBH output, and were installed in 1960.

The building is mostly air conditioned. The unit ventilators have dx coils for cooling with outdoor condensers. The library is cooled by a packaged roof top unit.

The original building has pneumatic controls, and the addition has DDC controls. The DDC system monitors the addition, along with the original building heating systems.

The domestic hot water is generated by a gas fired storage water heater. The heater is a RUUD, G-100-80, rated at 80 MBH input and 95 gallons of storage, and was installed in 2012.

### 2.3.3 Description of Building Lighting

Existing interior lighting system consists of 2X2 2 lamp, 1X4 2 and 4 lamp, 2X4 2, 3, and 4 lamp T8 linear fluorescent fixtures with electronic ballasts, incandescent, and high intensity discharge (HID) fixtures. Refer to Section 4 for a more detailed description.

## 2.4 Wall Intermediate School

### 2.4.1 Description of Building Envelope

The Wall Intermediate School was constructed around 1970, and is comprised of brick exterior with painted block interior. The original roof is a flat roof with bitumen roll surface. The building addition that appears to be built in 2000 and is comprised of CMU walls with a brick façade. The roof of the addition is flat with an EPDM membrane finish.

The Wall Intermediate School addition has 2-1/2 inches of polyisocyanurate insulation in the flat roof. This would equate to approximately an R-19 insulation value. The addition walls also have insulation which totals R-11.

The original building windows are all aluminum framed. The addition has double pane glass and the original building has single pane windows, both of which were observed to be in good condition. The exterior doors are metal, and appeared to be in good condition.

The building walls do not appear to be insulated to current energy code standards, and a major project to improve the building insulation values would probably not be cost effective. Incorporating insulation improvements into renovations is a cost effective incremental solution.

### 2.4.2 Description of Building HVAC

The heating system is comprised of unit ventilators with hot water coils and radiators. The classrooms are conditioned by unit ventilators, and the offices and classrooms are heated and cooled by gas fired packaged roof top units. These units are all controlled by individual DDC thermostats in each space. The gym is heated by air handlers with hot water coils. The unit ventilators, radiators, and air handlers are supplied with hot water by a central boiler plant, which consists of two gas fired hot water boilers. The boilers are HB Smith, cast iron, 450 Mills rated at 4052 MBH output, and were installed in 1999.

The building is mostly air conditioned. The unit ventilators have dx coils for cooling with outdoor condensers. The packaged roof top units are air cooled dx cooling, and were installed in 1999.

The building has an Andover DDC building control system. The system controls space temperature, building schedule and ventilation.

The domestic hot water is generated by a gas fired storage water heater. The heater is a PVI 500 P 250A-TP, rated at 400 MBH input and 250 gallons of storage, and was installed in 1999.

### 2.4.3 Description of Building Lighting

Existing interior lighting system consists of 2X2 2 lamp, 1X4 1, 2, and 3 lamp, 2X4 2, 3, and 4 lamp T8 linear fluorescent fixtures with electronic ballasts, compact fluorescent, incandescent, and high intensity discharge (HID) fixtures. Existing exterior lighting consists of HID wall packs. Refer to Section 4 for a more detailed description.

## 2.5 Wall High School

### 2.5.1 Description of Building Envelope

The Wall High School was constructed in 1959, and is comprised of a brick exterior with painted block interior. The building has a false sloped roof installed over the original flat roof. The building addition

appears to be built in 1996, and the addition walls are CMU walls with a brick façade. The roof of the addition is flat with an EPDM membrane finish.

The Wall Intermediate School addition has 2-1/2 inches of polyisocyanurate insulation in the flat roof. This would equate to approximately an R-19 insulation value. The addition walls also have insulation which totals R-11.

The windows in the building are aluminum framed with double pane glass, and were observed to be in good condition. The exterior doors are metal, and also appeared to be in good condition.

The building walls do not appear to be insulated to current energy code standards, and a major project to improve the building insulation values would probably not be cost effective. Incorporating insulation improvements into renovations is a cost effective incremental solution.

### 2.5.2 Description of Building HVAC

The heating system is comprised of unit ventilators with hot water coils and radiators. The classrooms are conditioned by unit ventilators. The north gym is heated by hot water coils in the outdoor air handler. The cafeteria is heated and cooled by gas fired packaged roof top units. These units are controlled by independent DDC thermostats in each space. The south gym is heated by air handlers with hot water coils, and is controlled by pneumatic controls. The unit ventilators, radiators, and air handlers are supplied with hot water by the two boiler plants, which consist of three gas fired steam boilers. The boilers are HB Smith, water tube, 450 Mills rated at 3588 MBH output and approximately 75% efficient, and were installed in 1959.

The addition boiler plant consists of two gas fired hot water boilers. The boilers are Weil McLain P-88-W rated at 80% efficient and 1656 MBH input each, and were installed in the 1996.

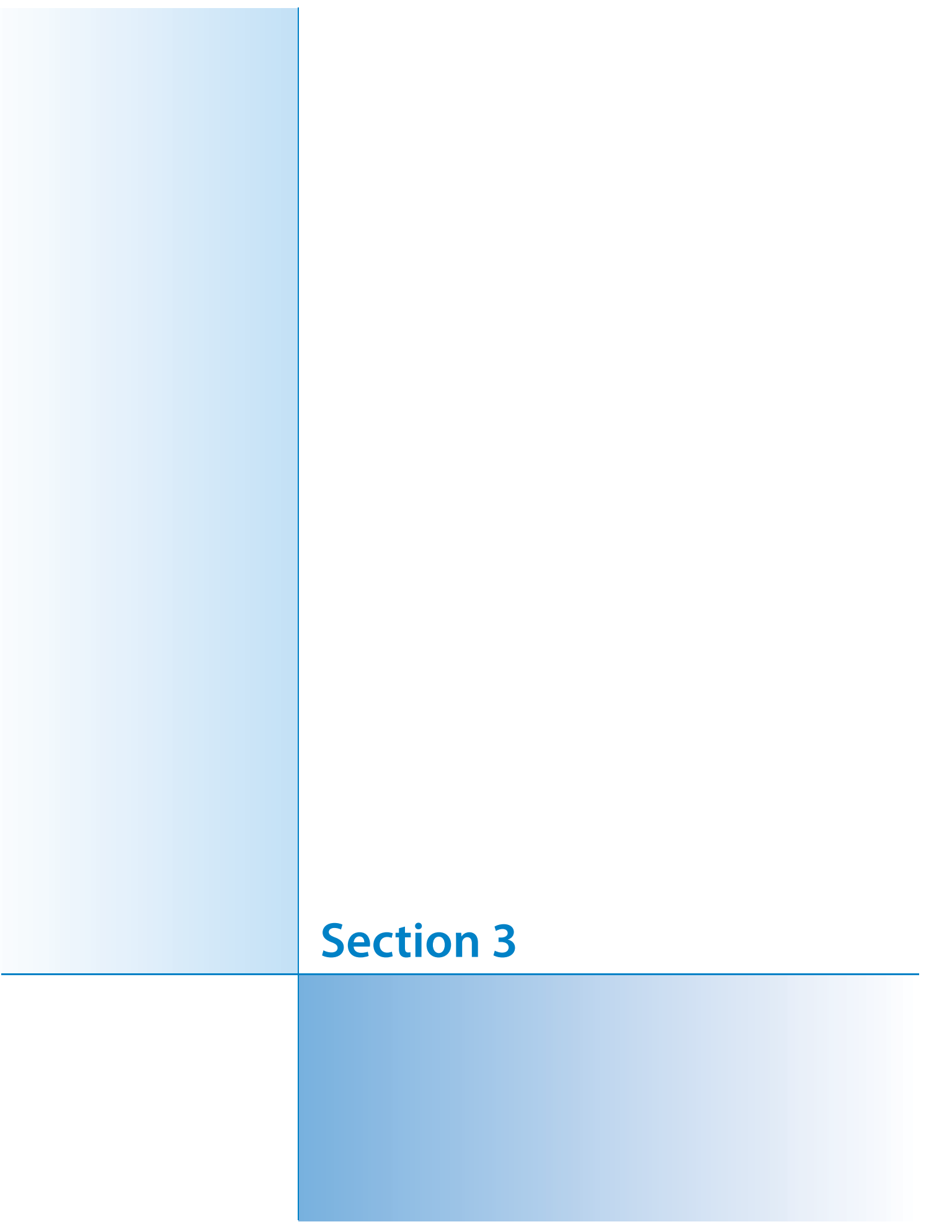
The building is mostly air conditioned. The unit ventilators have dx coils for cooling with outdoor condensers. The packaged roof top unit is air cooled dx cooling. The north gym is cooled by the outdoor air handler. The rooftop units were generally installed in 1999.

The building has a Metasys DDC building control system. The system controls space temperature, building schedule, and ventilation. Some pneumatic controls still exist in the building, as described above.

The domestic hot water is generated in both boiler plants. The original boiler plant supplies steam to a hot water converter. The hot water from the converter is connected to a 1000 gallon storage tank that was installed in 1959. The addition boiler room has an AO Smith LW500-920 gas fired hot water boiler rated at 500 MBH input. The boiler feeds four 200 gallon storage tanks. The addition hot water system is all original from 1996. Building staff reported problems with the addition domestic hot water boiler.

### 2.5.3 Description of Building Lighting

Existing interior lighting system consists of 2X2 2 lamp, 1X4 1, 2, and 3 lamp, 2X4 3 lamp T8 linear fluorescent fixtures with electronic ballasts, compact fluorescent, incandescent, and high intensity discharge (HID) fixtures. Existing exterior lighting consists of HID wall packs, incandescent, and compact fluorescent fixtures. Refer to Section 4 for a more detailed description.

The page features a decorative design with two blue squares and two intersecting lines. One square is light blue and occupies the top-left quadrant. The other is a darker blue and occupies the bottom-right quadrant. A thin blue vertical line runs down the center, and a thin blue horizontal line runs across the center, intersecting at the origin of the squares.

## Section 3

## Section 3

# Baseline Energy Use

### 3.1 Utility Data Analysis

The first step in the energy audit process is the compilation and quantification of the facility's current and historical energy usage and associated utility costs. It is important to establish the existing patterns of electricity, gas, and oil usage in order to be able to identify areas in which energy consumption can be reduced.

For this study, the monthly gas and electric bills per facility were analyzed and unit costs of energy were obtained. The unit cost of energy, as determined from the information provided by the Board, was utilized in determining the feasibility of switching from one energy source to another or reducing the demand on that particular source of energy to create annual cost savings for the Board.

#### 3.1.1 Electric Charges

It is also important to understand how the utilities charge for the service. The majority of the energy consumed is electric as a result of both indoor and outdoor lighting and appliances such as kitchen appliances, computers, printers, and projectors. Electricity is charged by three basic components: electrical consumption (kWh), electrical demand (kW) and power factor (kVAR) (reactive power). The cost for electrical consumption is similar to the cost for fuel and the monthly consumption appears on the utility bill as kWh consumed per month with a cost figure associated with it. The service connections are either billed on a flat rate, or time of day rates per kWh.

Electrical demand can be as much as 50 percent or more of the electric bill. The maximum demand (kW value) during the billing period is multiplied by the demand cost factor and the result is added to the electric bill. It is often possible to decrease the electric bill by 15 – 25 percent by reducing the demand, while still using the same amount of energy.

The power factor (reactive power) is the power required to energize electric and magnetic fields that result in the production of real power. Power factor is important because transmission and distribution systems must be designed and built to manage the need for real power, as well as the reactive power component (the total power). If the power factor is low, then the total power required can be greater than 50 percent or more than the real power alone. The power factor charge is a penalty for having a low power factor. Fortunately, this penalty charge does not impact the Board.

The other parts of the electric bill are the supply charges, delivery charges, system benefits, transmission revenue adjustments, state and municipality tariff surcharges and sales taxes, which cannot be avoided.

Jersey Central Power and Light is the current supplier and distributor of electric energy for the Board.

### 3.1.2 Natural Gas Charges

Hess Corporation is the current supplier and New Jersey Natural Gas is the current distributor of natural gas for the Board. The Board is charged for the cost of the natural gas, a delivery charge and a customer charge, which covers gas administration charges.

## 3.2 Facility Results

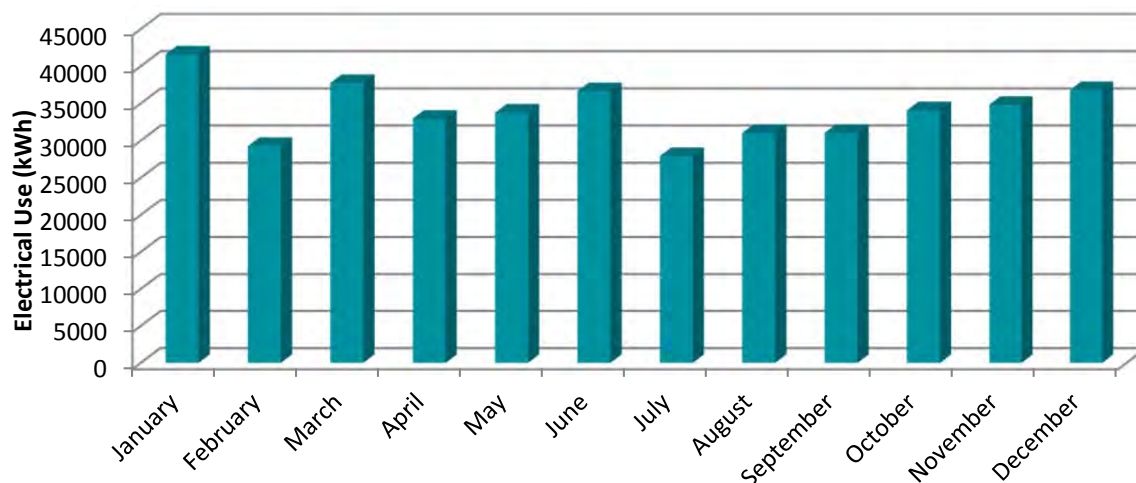
### 3.2.1 Allenwood Elementary School

Electric power for Allenwood Elementary School is fed from one General Service Secondary three phase line from Jersey Central Power and Light. Figure 3.2-1 illustrates the average monthly total energy consumption from September 2010 through August 2011.

From this graph, it can be determined that the baseline electrical consumption for Allenwood Elementary School is approximately 33,964 kWh/month.

Table 3.2-1 illustrates the seasonal peak demand loads for the Allenwood Elementary School from September 2010 through August 2011. The information presented is only as recent as the most recent bill received.

**Figure 3.2-1: Allenwood Elementary School Electricity Usage**



A rising trend for the electrical usage in the winter months at Allenwood Elementary School can possibly be attributed to the increased use of the lighting in winter months, due to shorter daylight hours and also possibly to an increase in the building occupancy.

The most recent tariff rates available at the time of this audit for the electrical service at Allenwood Elementary School from Jersey Central Power and Light are as follows:

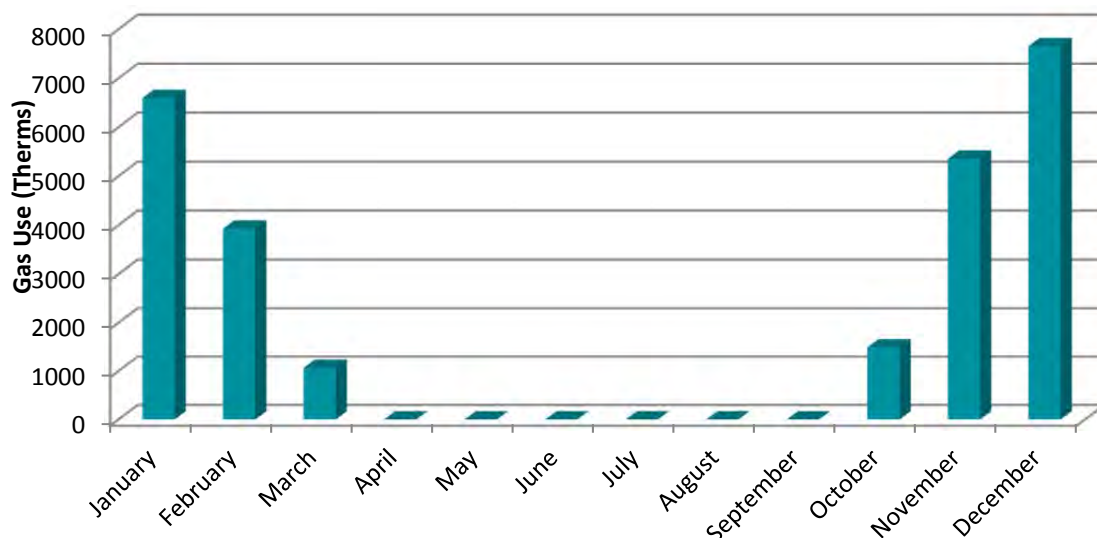
|                                |                                 |
|--------------------------------|---------------------------------|
|                                | <b>Acct #: 10 00 12 9680 28</b> |
| Service Charge:                | \$11.65/month                   |
|                                |                                 |
| Delivery Service Charges:      | \$0.011381kWh<br>\$5.966620/kW  |
|                                |                                 |
| Societal Benefits Charge:      | \$0.003207/kWh                  |
|                                |                                 |
| Non-Utility Generation Charge: | \$0.008385/kWh                  |
|                                |                                 |
| System Control Charge:         | \$0.000055/kWh                  |
| RGGI Recovery Charge           | \$0.00124/kWh                   |
|                                |                                 |

**Table 3.2-1: Allenwood Elementary School Seasonal Peak Demands**

| Season | Peak Demand (kW) |
|--------|------------------|
| Summer | 139              |
| Winter | 104              |

Refer to Table 3.3-1, in Section 3.3 for the average electrical aggregate cost. These tariffs are subject to change quite frequently. Refer to Appendix A for a complete Historical Data Analysis.

Figure 3.2-2 illustrates the monthly average natural gas consumption at Allenwood Elementary School from September 2010 through August 2011.

**Figure 3.2-2: Allenwood Elementary School Gas Usage**

For more on Allenwood Elementary School gas usage, refer to Section 4.2.

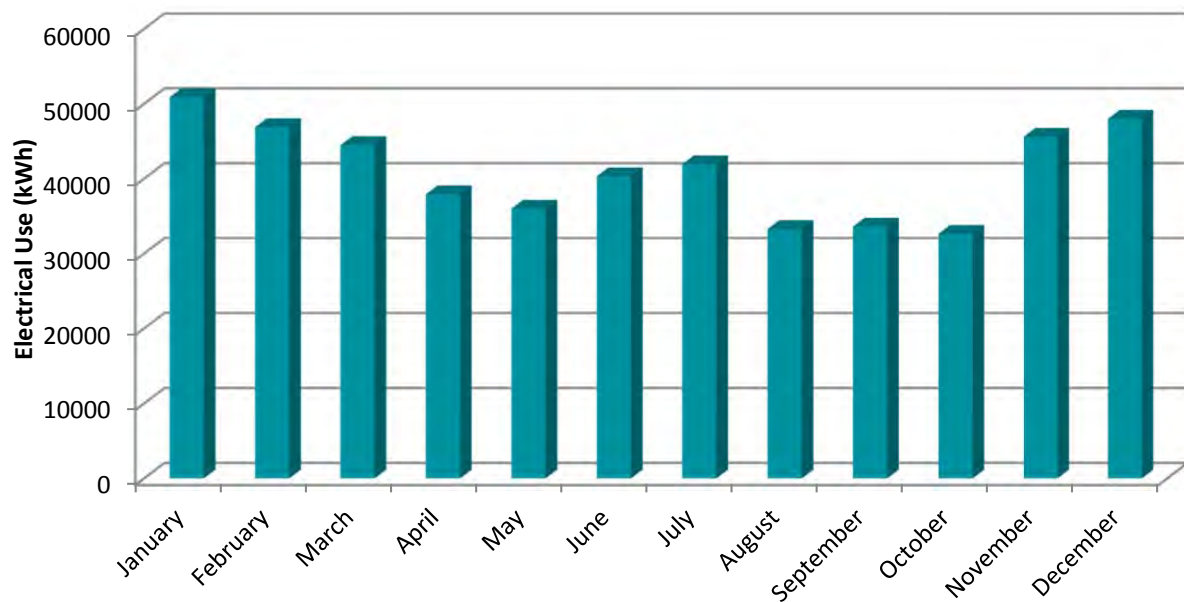
### 3.2.2 Central Elementary School

Electric power for Central Elementary School is fed from one General Service Secondary three phase line from Jersey Central Power and Light. Figure 3.2-3 illustrates the average monthly total energy consumption from September, 2010 through August, 2011.

From this graph, it can be determined that the baseline electrical consumption for Central Elementary School is approximately 40,960 kWh/month.

Table 3.2-2 illustrates the seasonal peak demand loads for the Central Elementary School from September 2010 through August 2011. The information presented is only as recent as the most recent bill received.

**Figure 3.2-3: Central Elementary School Electricity Usage**



A rising trend for the electrical usage in the winter months at Central Elementary School can possibly be attributed to the increased use of the lighting in winter months, due to shorter daylight hours and also possibly to an increase in the building occupancy.

The most recent tariff rates available at the time of this audit for the electrical service at Central Elementary School from Jersey Central Power and Light are as follows:

|                                |                                 |
|--------------------------------|---------------------------------|
|                                | <b>Acct #: 10 00 13 6576 79</b> |
| Service Charge:                | \$11.65/month                   |
|                                |                                 |
| Delivery Service Charges:      | \$0.006836/kWh<br>\$7.220012/kW |
|                                |                                 |
| Societal Benefits Charge:      | \$0.006413/kWh                  |
|                                |                                 |
| Non-Utility Generation Charge: | \$0.008385/kWh                  |
|                                |                                 |
| System Control Charge:         | \$0.000055/kWh                  |
| RGGI Recovery Charge           | \$0.00124/kWh                   |
|                                |                                 |

|                           |                                                |
|---------------------------|------------------------------------------------|
|                           | <b>Acct #: 10 00 13 4036 29</b>                |
| Service Charge:           | \$11.65/month                                  |
|                           |                                                |
| Delivery Service Charges: | First 10kW \$0.00/kW<br>Remaining kW \$3.16/kW |



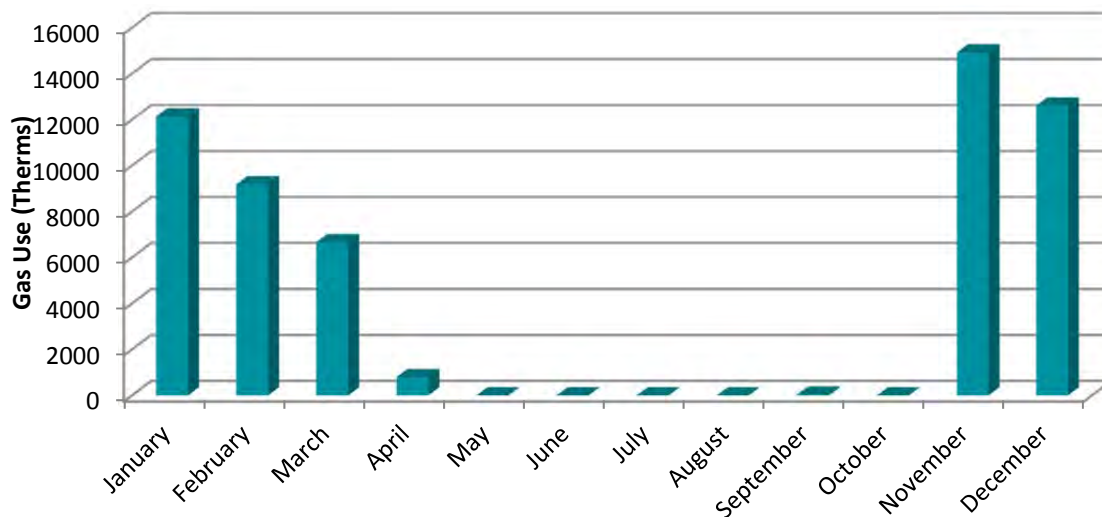
|                                |                                 |
|--------------------------------|---------------------------------|
|                                | <b>Acct #: 10 00 13 4036 29</b> |
| Societal Benefits Charge:      | \$0.003207/kWh                  |
| Non-Utility Generation Charge: | \$0.008386/kWh                  |
| System Control Charge:         | \$0.000056/kWh                  |
| RGGI Recovery Charge           | \$0.00124/kWh                   |

**Table 3.2-2: Central Elementary School Seasonal Peak Demands**

| Season | Peak Demand (kW) |
|--------|------------------|
| Summer | 179              |
| Winter | 137              |

Refer to Table 3.3-1, in Section 3.3 for the average electrical aggregate cost. These tariffs are subject to change quite frequently. Refer to Appendix A for a complete Historical Data Analysis.

Figure 3.2-4 illustrates the monthly average natural gas consumption at Central Elementary School from September 2010 through August 2011.

**Figure 3.2-4: Central Elementary School Gas Usage**

For more on Central Elementary School gas usage, refer to Section 4.2.

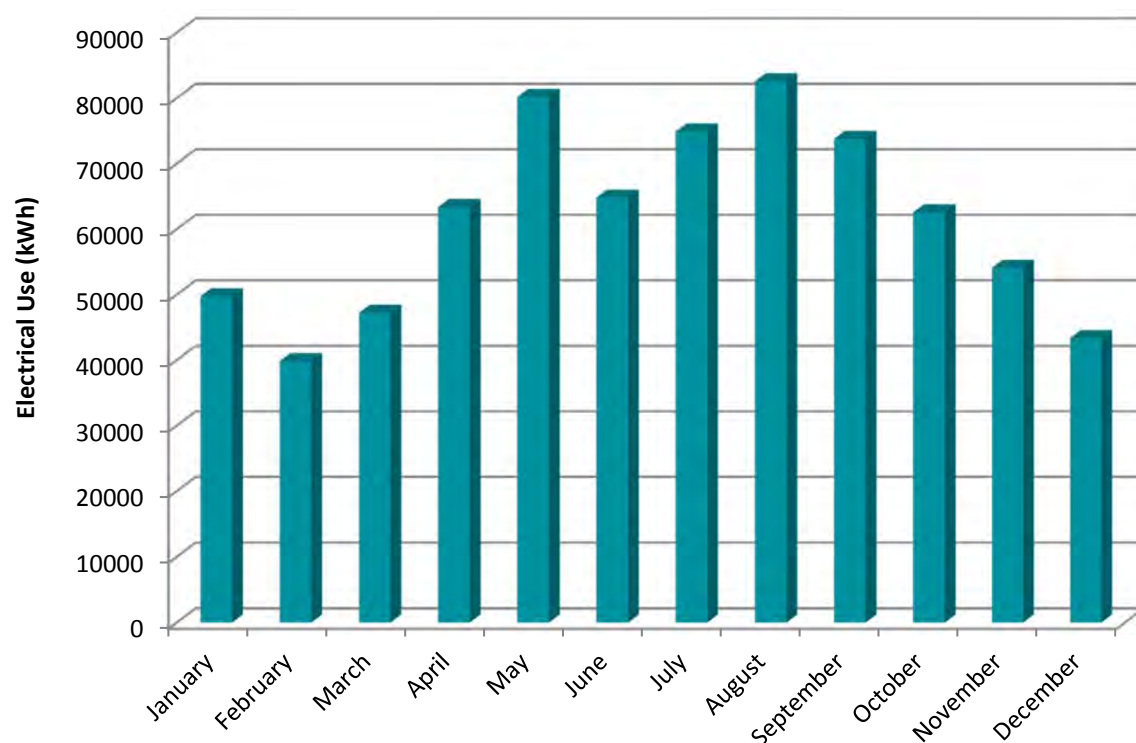
### 3.2.3 Old Mill Elementary School

Electric power for Old Mill Elementary School is fed from one General Service Secondary three phase line from Jersey Central Power and Light. Figure 3.2-5 illustrates the average monthly total energy consumption from September, 2010 through August, 2011.

From this graph, it can be determined that the baseline electrical consumption for Old Mill Elementary School is approximately 61,360 kWh/month.

Table 3.2-3 illustrates the seasonal peak demand loads for the Old Mill Elementary School from September 2010 through August 2011. The information presented is only as recent as the most recent bill received.

**Figure 3.2-5: Old Mill Elementary School Electricity Usage**



The most recent tariff rates available at the time of this audit for the electrical service at Old Mill Elementary School, from Jersey Central Power and Light are as follows:

|                                |                                 |
|--------------------------------|---------------------------------|
|                                | <b>Acct #: 10 00 12 1577 05</b> |
| Service Charge:                | \$11.65/month                   |
|                                |                                 |
| Delivery Service Charges:      | \$0.010526/kWh<br>\$6.435273/kW |
|                                |                                 |
| Societal Benefits Charge:      | \$0.003206/kWh                  |
|                                |                                 |
| Non-Utility Generation Charge: | \$0.008385/kWh                  |
|                                |                                 |
| System Control Charge:         | \$0.000055/kWh                  |
| RGGI Recovery Charge           | \$0.00124/kWh                   |
|                                |                                 |

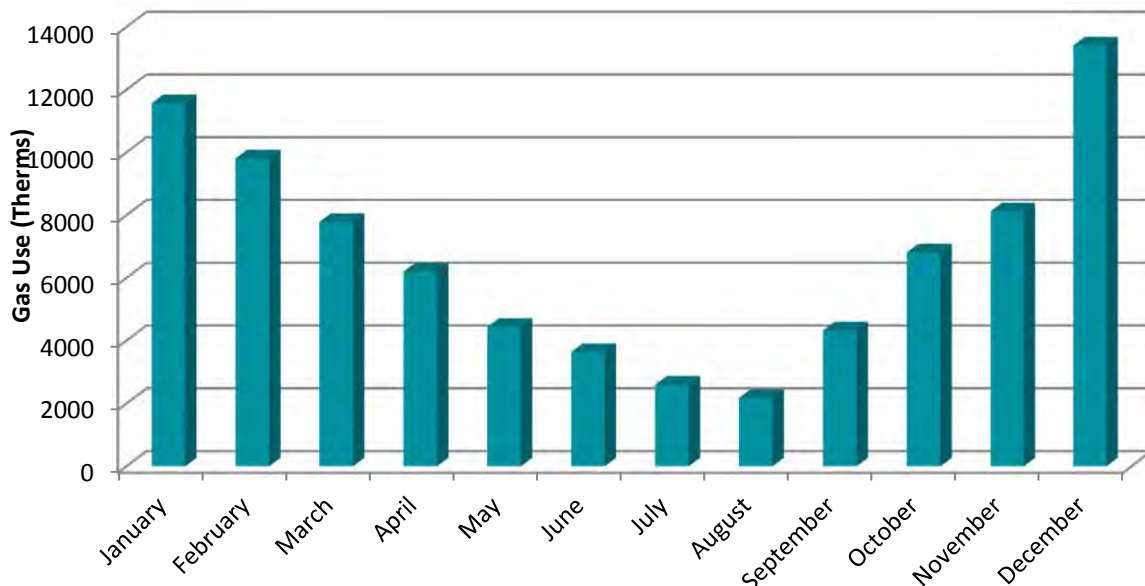
**Table 3.2-3: Old Mill Elementary School Seasonal Peak Demands**

| Season | Peak Demand (kW) |
|--------|------------------|
| Summer | 209              |
| Winter | 160              |

Refer to Table 3.3-1, in Section 3.3 for the average electrical aggregate cost. These tariffs are subject to change quite frequently. Refer to Appendix A for a complete Historical Data Analysis.

Figure 3.2-6 illustrates the monthly average natural gas consumption at Old Mill Elementary School from September 2010 through August 2011.

**Figure 3.2-6: Old Mill Elementary School Gas Usage**



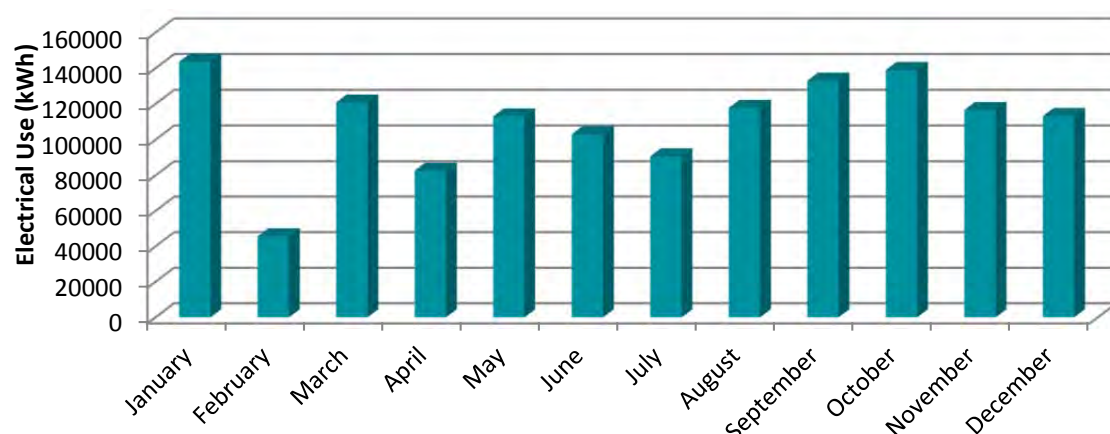
For more on Old Mill Elementary School gas usage, refer to Section 4.2.

### 3.2.4 Wall Intermediate School

Electric power for Wall Intermediate School is fed from one General Service Secondary three phase line from Jersey Central Power and Light. Figure 3.2-7 illustrates the average monthly total energy consumption from September 2010 through August 2011.

From this graph, it can be determined that the baseline electrical consumption for Wall Intermediate School is approximately 131,407 kWh/month.

Table 3.2-4 illustrates the seasonal peak demand loads for the Wall Intermediate School from September 2010 through August 2011. The information presented is only as recent as the most recent bill received.

**Figure 3.2-7: Wall Intermediate School Electricity Usage**

The discrepancy between January and February is assumed to be due to an estimated bill for January. Estimated bills can miss a portion of the actual usage, which, when combined with the following month's usage, can appear to be significantly more or less than usual. If that is not the case, the Board should investigate the cause and be very careful not to repeat this increased usage again.

The most recent tariff rates available at the time of this audit for the electrical service at Wall Intermediate School from Jersey Central Power and Light are as follows:

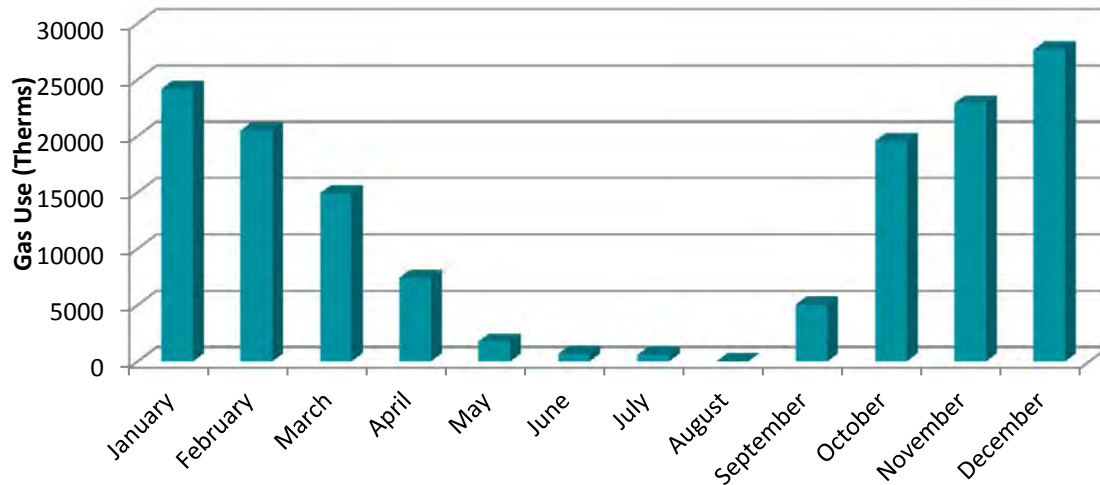
|                                |                                 |
|--------------------------------|---------------------------------|
|                                | <b>Acct #: 10 00 11 4715 52</b> |
| Service Charge:                | \$11.65/month                   |
| Supply Availability Charge:    | \$0.000161/kWh                  |
|                                |                                 |
| Delivery Service Charges:      | \$0.008090/kWh                  |
|                                | \$6.850911/kW                   |
|                                |                                 |
| Societal Benefits Charge:      | \$0.003207/kWh                  |
|                                |                                 |
| Non-Utility Generation Charge: | \$0.008385/kWh                  |
|                                |                                 |
| System Control Charge:         | \$0.000055/kWh                  |
| RGGI Recovery Charge           | \$0.00124/kWh                   |
|                                |                                 |

**Table 3.2-4: Wall Intermediate School Seasonal Peak Demands**

| Season | Peak Demand (kW) |
|--------|------------------|
| Summer | 382              |
| Winter | 482              |

Refer to Table 3.3-1, in Section 3.3 for the average electrical aggregate cost. These tariffs are subject to change quite frequently. Refer to Appendix A for a complete Historical Data Analysis.

Figure 3.2-8 illustrates the monthly average natural gas consumption at Wall Intermediate School from September 2010 through August 2011.

**Figure 3.2-8: Wall Intermediate School Gas Usage**

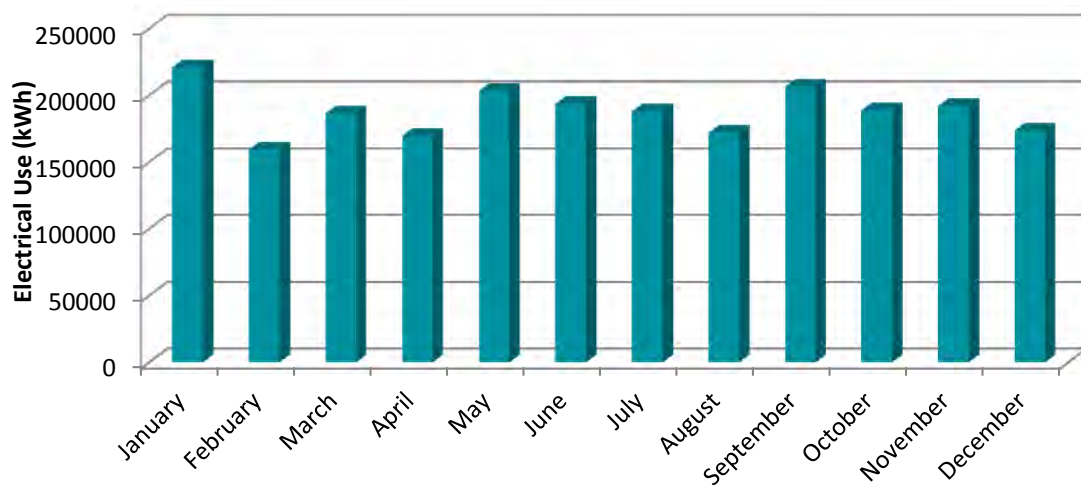
For more on Wall Intermediate School gas usage, refer to Section 4.2.

### 3.2.5 Wall High School

Electric power for Wall High School is fed from one General Service Secondary three phase line from Jersey Central Power and Light. Figure 3.2-9 illustrates the average monthly total energy consumption from September 2010 through August 2011.

From this graph, it can be determined that the baseline electrical consumption for Wall High School is approximately 220,667 kWh/month.

Table 3.2-5 illustrates the seasonal peak demand loads for the Wall High School from September 2010 through August 2011. The information presented is only as recent as the most recent bill received.

**Figure 3.2-9: Wall High School Electricity Usage**

The discrepancy between January and February is assumed to be due to an estimated bill for January. Estimated bills can miss a portion of the actual usage, which, when combined with the following month's

usage, can appear to be significantly more or less than usual. If that is not the case, the Board should investigate the cause and be very careful not to repeat this increased usage again.

The most recent tariff rates available at the time of this audit for the electrical service at Wall High School from Jersey Central Power and Light are as follows:

|                                |                                 |
|--------------------------------|---------------------------------|
|                                | <b>Acct #: 10 00 58 8037 17</b> |
| Service Charge:                | \$11.65/month                   |
|                                |                                 |
| Delivery Service Charges:      | \$0.009197/kWh                  |
|                                | \$6.425926/kW                   |
|                                |                                 |
| Societal Benefits Charge:      | \$0.003206/kWh                  |
|                                |                                 |
| Non-Utility Generation Charge: | \$0.008385/kWh                  |
|                                |                                 |
| System Control Charge:         | \$0.000055/kWh                  |
| RGGI Recovery Charge           | \$0.00124/kWh                   |
|                                |                                 |

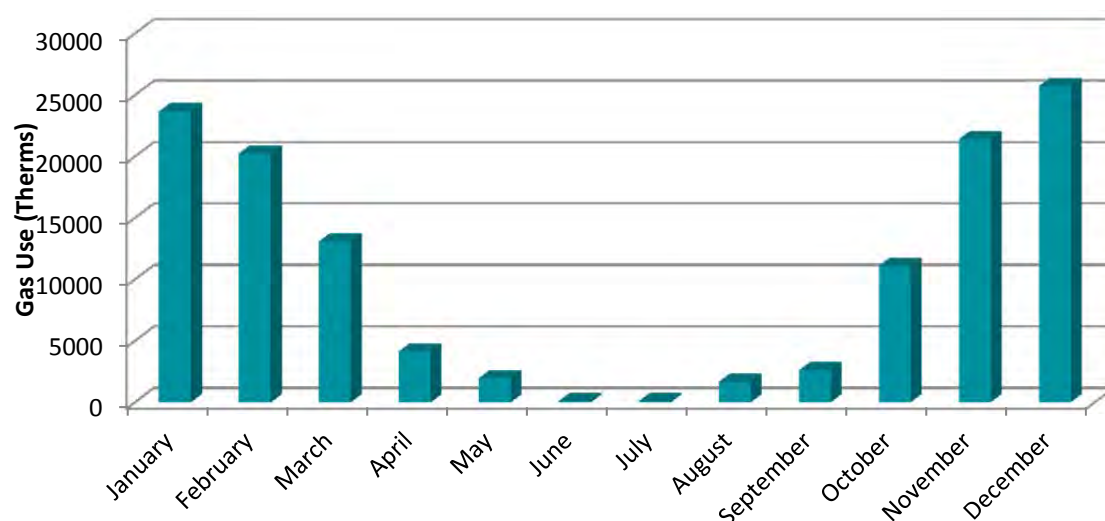
**Table 3.2-5: Wall High School Seasonal Peak Demands**

| Season | Peak Demand (kW) |
|--------|------------------|
| Summer | 666              |
| Winter | 658              |

Refer to Table 3.3-1, in Section 3.3 for the average electrical aggregate cost. These tariffs are subject to change quite frequently. Refer to Appendix A for a complete Historical Data Analysis.

Figure 3.2-10 illustrates the monthly average natural gas consumption at Wall High School from September 2010 through August 2011.

**Figure 3.2-10: Wall High School Gas Usage**



For more on Wall High School gas usage, refer to Section 4.2.

## 3.3 Aggregate Costs

For the purposes of computing energy savings for all identified energy conservation and retrofit measures, aggregate unit costs for electrical energy and fuel, in terms of cost/kWh and cost/therm, were determined for each service location and utilized in the simple payback analyses discussed in subsequent sections. The aggregate unit cost accounts for all distribution and supply charges for each location. Table 3.3-1 and Table 3.3-2 summarize the aggregate costs for electrical energy consumption and therms utilized respectively.

**Table 3.3-1: Electrical Aggregate Unit Costs**

| Service Location            | Aggregate \$ / kW-hr |
|-----------------------------|----------------------|
| Allenwood Elementary School | \$0.15               |
| Central Elementary School   | \$0.15               |
| Old Mill Elementary School  | \$0.15               |
| Wall Intermediate School    | \$0.14               |
| Wall High School            | \$0.15               |

**Table 3.3-2: Natural Gas Aggregate Unit Costs**

| Service Location            | Aggregate \$ / therm |
|-----------------------------|----------------------|
| Allenwood Elementary School | \$1.39               |
| Central Elementary School   | \$1.19               |
| Old Mill Elementary School  | \$1.11               |
| Wall Intermediate School    | \$1.12               |
| Wall High School            | \$1.20               |

## 3.4 Portfolio Manager

### 3.4.1 Portfolio Manager Overview

Portfolio Manager is an interactive energy management tool that allows the Board to track and assess energy consumption at the facilities in a secure online environment. Portfolio Manager can help the Board set investment priorities, verify efficiency improvements, and receive EPA recognition for superior energy performance.

### 3.4.2 Energy Performance Rating

For many facilities, you can rate their energy performance on a scale of 1–100 relative to similar facilities nationwide. Your facility is not compared to the other facilities entered into Portfolio Manager to determine your ENERGY STAR rating. Instead, statistically representative models are used to compare your facility against similar facilities from a national survey conducted by the Department of Energy's Energy Information Administration. This national survey, known as the Commercial Building Energy Consumption Survey (CBECS), is conducted every four years, and gathers data on building characteristics and energy use from thousands of facilities across the United States. Your facility's peer group of comparison is those facilities in the CBECS survey that have similar facility and operating characteristics. A rating of 50 indicates that the facility, from an energy consumption standpoint, performs better than 50% of all similar facilities nationwide, while a rating of 75 indicates that the facility performs better than 75% of all similar facilities nationwide.

### 3.4.3 Portfolio Manager Account Information

A Portfolio Manager account has been established for the Board, which includes a profile for the four schools. Information entered into this Portfolio Manager Facility profile, including electrical energy consumption and natural gas consumption has been used to establish a performance baseline.

It is recommended that the information be updated to track the buildings' energy usage. The five Wall Township Board of Education schools were rated as follows:

|                             |    |
|-----------------------------|----|
| Allenwood Elementary School | 42 |
| Central Elementary School   | 38 |
| Old Mill Elementary School  | 42 |
| Wall Intermediate School    | 33 |
| Wall High School            | 13 |

Results are a reflection of the information supplied. If more recent information is entered into the Portfolio Manager account, there is a possibility for better results.

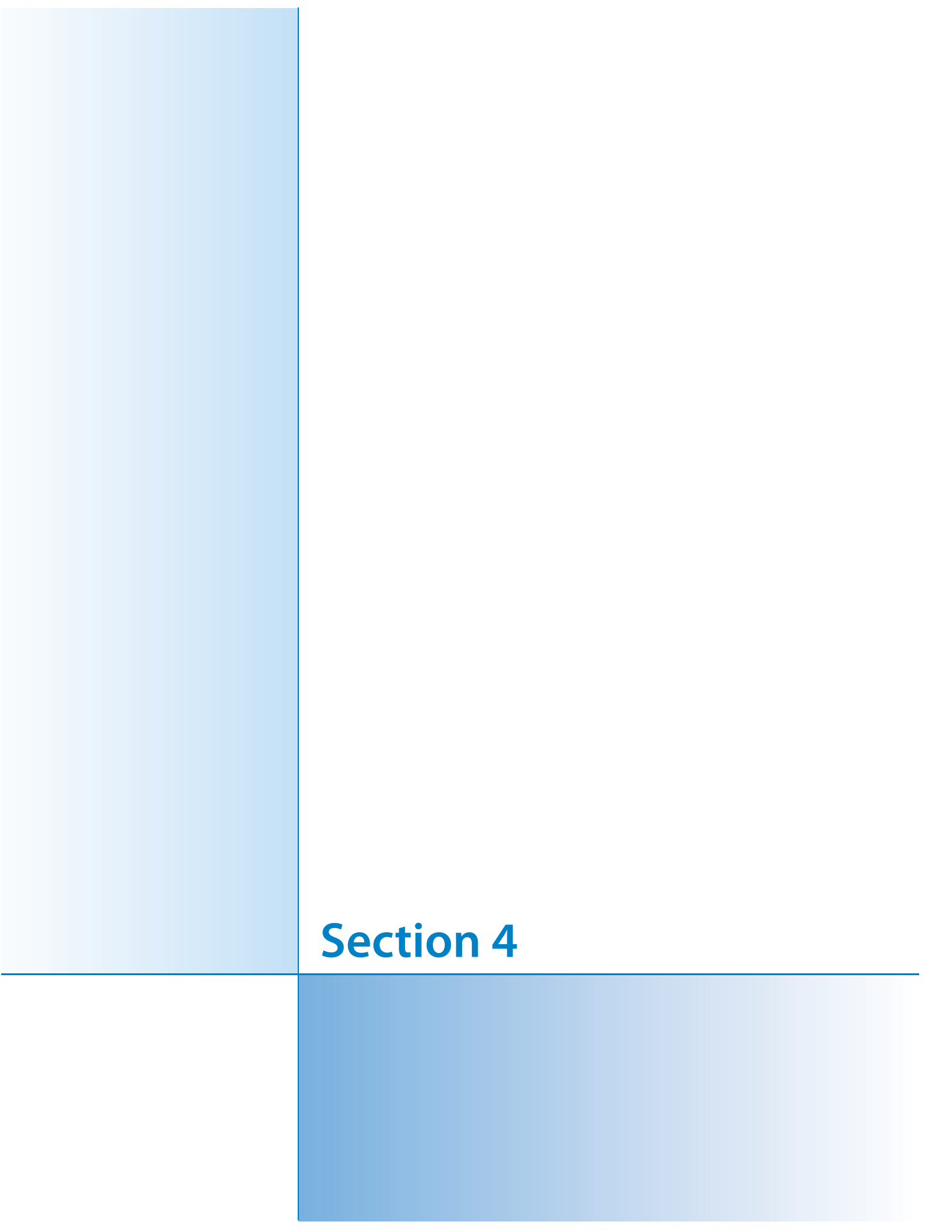
The following website link, username and password shall be used to access the Portfolio Manager account and building profiles that has been established for the Board:

<https://www.energystar.gov/istar/pmpam/>

USERNAME: WallTownshipPS

PASSWORD: PUBLICSCHOOL



The page features a decorative design with two blue squares and two intersecting lines. One square is light blue and occupies the top-left quadrant. The other is a darker blue and occupies the bottom-right quadrant. A thin blue vertical line runs down the center, and a thin blue horizontal line runs across the center, intersecting at the origin of the squares.

## Section 4

## Section 4

# Energy Conservation and Retrofit Measures (ECRMs)

The following is a summary of how Annual Return on Investment (AROI), Internal Rate of Return (IRR), and Net Present Value (NPV) will be broken down in the cost analysis for all ECRMs recommended in this report.

Included in the simplified payback analysis summary table is the 'Annual Return on Investment' (AROI) values. This value is a performance measure used to evaluate the efficiency of an investment and is calculated using the following equation:

$$AROI = \frac{AECS + OCS}{NET\ ECM\ Cost} - \frac{1}{Lifetime}$$

Where OCS = Operating Cost Savings, and AECS = Annual Energy Cost Savings.

Also included in the table are net present values for each option. The NPV calculates the present value of an investment's future cash flows based on the time value of money, which is accounted for by a discount rate (DR) (assume bond rate of 3%). NPV is calculated using the following equation:

$$NPV = \sum_{n=0}^N \frac{C_n}{(1 + DR)^n}$$

Where  $C_n$ =Annual cash flow, and N = number of years.

The Internal Rate of Return (IRR) expresses an annual rate that results in a break-even point for the investment. If the Board is currently experiencing a lower return on their capital than the IRR, the project is financially advantageous. This measure also allows the Board to compare ECM's against each other to determine the most appealing choices.

$$IRR \rightarrow 0 = \sum_{n=0}^N \frac{C_n}{(1 + IRR)^n}$$

Where  $C_n$ =Annual cash flow, and N = number of years.

The lifetime energy savings (LS) represents the cumulative energy savings over the assumed life of the ECM. The net maintenance cost savings (NMCS) represents the cumulative maintenance cost savings that can be attributed to implementing all of the recommended lighting upgrades for each of the ECMs.

## 4.1 Building Lighting Systems

The goal of this section is to present any lighting energy conservation measures that may also be cost beneficial. It should be noted that replacing current bulbs with more energy-efficient equivalents will have a small effect on the building heating and cooling loads. The building cooling load will see a small decrease from an upgrade to more efficient bulbs and the heating load will see a small increase, as the more energy efficient bulbs give off less heat.

Two options are offered for most buildings, where both interior and exterior lighting upgrades are being proposed. The first option will be for upgrading existing interior lighting, if applicable. The second option will be for upgrading existing exterior lighting, if applicable. A total cost for upgrading both options at the same time will be presented. Retrofitting of existing fluorescent fixtures includes upgrading both ballasts and lamps for the fixture. For buildings only requiring interior or exterior upgrades, only the applicable upgrade option is listed. Refer to Appendix D for more information.

Please note that the Engineer's Estimate of Probable Construction Costs presented herein are estimates based on historic data compiled from similar installations and engineering opinions. Additional engineering will be required for each measure identified in this report and final scope of work and budget cost estimates will need to be confirmed prior to the coordination of project financing or the issuance of a Request for Proposal.

It is recommended that the existing lighting systems at the buildings listed in Section 1 be upgraded to high efficiency standards to create lighting uniformity throughout the portfolio of properties. In general, the recommended lighting upgrade, as presented in Appendix D, involves replacing existing inefficient bulbs, and installing new energy-efficient luminaires to the existing lighting systems.

The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. Please refer to Appendix D for a line-by-line proposed detailed lighting upgrades list.

The following table, Table 4.1-1, summarizes the proposed lighting upgrades for each of the Wall Township Board of Education facilities included in this audit.

| <b>Table 4.1-1</b><br><b>Wall Township Board of Education Lighting Upgrades Summary</b> |                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Facility</b>                                                                         | <b>Proposed Lighting Upgrades</b>                                                                                                                                                                                                               |
| Allenwood Elementary School                                                             | <b>Interior:</b> Metal Halide to Fluorescent Conversion, Incandescent Replacement with Compact Fluorescent (CFL), Occupancy Sensors<br><b>Exterior:</b> Metal Halide to LED Conversion, Incandescent Replacement with Compact Fluorescent (CFL) |
| Central Elementary School                                                               | <b>Interior:</b> Metal Halide to Fluorescent Conversion, Incandescent Replacement with Compact Fluorescent (CFL), Occupancy Sensors<br><b>Exterior:</b> Metal Halide to LED Conversion                                                          |
| Old Mill Elementary School                                                              | <b>Interior:</b> Metal Halide to Fluorescent Conversion, Incandescent Replacement with Compact Fluorescent (CFL), Occupancy Sensors<br><b>Exterior:</b> Metal Halide to LED Conversion                                                          |
| Wall Intermediate School                                                                | <b>Interior:</b> Metal Halide to Fluorescent Conversion, Incandescent Replacement with Compact Fluorescent (CFL), Occupancy Sensors<br><b>Exterior:</b> Metal Halide to LED Conversion                                                          |

| Table 4.1-1<br>Wall Township Board of Education Lighting Upgrades Summary |                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Facility                                                                  | Proposed Lighting Upgrades                                                                                                                                                                                                                      |
| Wall High School                                                          | <i>Interior:</i> Metal Halide to Fluorescent Conversion, Incandescent Replacement with Compact Fluorescent (CFL), Occupancy Sensors<br><i>Exterior:</i> Metal Halide to LED Conversion, Incandescent Replacement with Compact Fluorescent (CFL) |

The following table, Table 4.1-2, summarizes a simple payback analysis assuming the implementation of all lighting system improvements at all of the Wall Township Board of Education facilities.

| Table 4.1-2<br>Wall Township Board of Education Lighting |                                    |           |            |                  |                        |          |         |        |     |           |           |
|----------------------------------------------------------|------------------------------------|-----------|------------|------------------|------------------------|----------|---------|--------|-----|-----------|-----------|
| Location                                                 | Engineers Opinion of Probable Cost | Incentive | Total Cost | Energy Savings * | Simple Payback (Years) | KWH Save | NMCS    | ARO I  | IRR | NPV       | LS        |
| Allenwood Elementary School<br><b>Interior</b>           | \$26,421                           | \$3,440   | \$22,981   | \$8,005          | 2.9                    | 55,145   | (\$267) | 28%    | 37% | \$93,591  | \$153,846 |
| Allenwood Elementary School<br><b>Exterior</b>           | \$8,727                            | \$1,170   | \$7,557    | \$1,050          | 7.2                    | 6,570    | \$64    | 7%     | 14% | \$7,728   | \$18,330  |
| Allenwood Elementary School<br><b>Total</b>              | \$35,147                           | \$4,610   | \$30,537   | \$9,054          | 3.4                    | 61,716   | (\$203) | 23%    | 32% | \$101,318 | \$172,176 |
| Central Elementary School<br><b>Interior</b>             | \$18,864                           | \$3,175   | \$15,689   | \$7,801          | 2.0                    | 55,860   | (\$578) | 43%    | 53% | \$97,916  | \$155,840 |
| Central Elementary School<br><b>Exterior</b>             | \$4,459                            | \$600     | \$3,859    | \$250            | 15.5                   | 1,663    | \$0     | (0.2%) | 2%  | (\$226)   | \$4,640   |
| Central Elementary School<br><b>Total</b>                | \$23,323                           | \$3,775   | \$19,548   | \$8,050          | 2.4                    | 57,523   | (\$578) | 35%    | 44% | \$97,690  | \$160,480 |
| Old Mill Elementary School<br><b>Interior</b>            | \$25,931                           | \$3,280   | \$22,651   | \$10,809         | 2.1                    | 73,996   | (\$290) | 41%    | 51% | \$134,765 | \$206,437 |
| Old Mill Elementary School<br><b>Exterior</b>            | \$3,030                            | \$700     | \$2,330    | \$1,209          | 1.9                    | 8,060    | \$0     | 45%    | 55% | \$15,277  | \$22,487  |
| Old Mill Elementary School<br><b>Total</b>               | \$28,961                           | \$3,980   | \$24,981   | \$12,018         | 2.1                    | 82,057   | (290)   | 41%    | 51% | \$150,043 | \$228,924 |

**Table 4.1-2**  
**Wall Township Board of Education Lighting**

| Location                                    | Engineers<br>Opinion<br>of<br>Probable<br>Cost | Incentive | Total<br>Cost | Energy<br>Savings<br>* | Simple<br>Payback<br>(Years) | KWH<br>Save | NMCS      | ARO I | IRR | NPV       | LS        |
|---------------------------------------------|------------------------------------------------|-----------|---------------|------------------------|------------------------------|-------------|-----------|-------|-----|-----------|-----------|
| Wall Intermediate School<br><b>Interior</b> | \$46,326                                       | \$8,405   | \$37,921      | \$17,068               | 2.2                          | 138,993     | (2,391)   | 38%   | 48% | \$210,648 | \$361,917 |
| Wall Intermediate School<br><b>Exterior</b> | \$35,932                                       | \$4,800   | \$31,132      | \$3,376                | 9.2                          | 24,111      | \$0       | 4%    | 10% | \$18,027  | \$62,782  |
| Wall Intermediate School<br><b>Total</b>    | \$82,258                                       | \$13,205  | \$69,053      | \$20,444               | 3.4                          | 163,104     | (2,391)   | 23%   | 32% | \$228,675 | \$424,699 |
| Wall High School<br><b>Interior</b>         | \$63,068                                       | \$11,795  | \$51,273      | \$27,419               | 1.9                          | 209,175     | (3,958)   | 47%   | 56% | \$348,029 | \$583,565 |
| Wall High School<br><b>Exterior</b>         | \$16,337                                       | \$2,215   | \$14,122      | \$1,875                | 7.5                          | 11,362      | 171       | 7%    | 13% | \$13,184  | \$31,699  |
| Wall High School<br><b>Total</b>            | \$79,405                                       | \$14,010  | \$65,395      | \$29,294               | 2.2                          | 220,538     | (\$3,787) | 38%   | 48% | \$361,213 | \$615,265 |

\*Energy savings includes NMCS

## 4.2 HVAC Systems

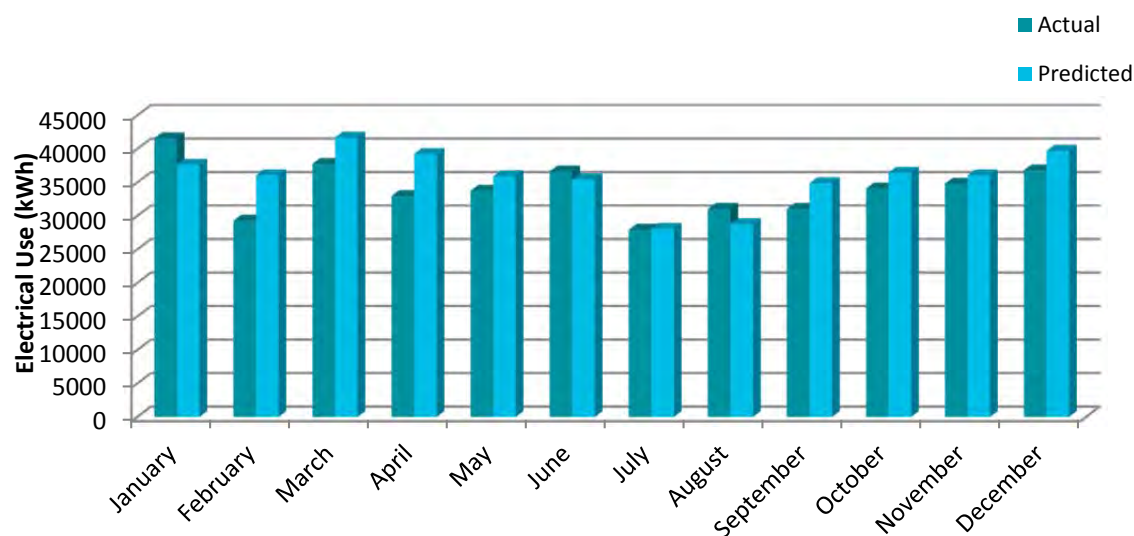
The goal of this section is to present any heating and cooling energy reduction and cost saving measures that may also be cost beneficial. Where possible, measures will be presented with a life-cycle cost analysis. This analysis displays a payback period based on weighing the capital cost of the measure against predicted annual fiscal savings. To do this, the buildings have been modeled as accurately as possible to predict energy usage for space heating and cooling, as well as domestic hot water use.

Each building is modeled using software called eQuest, a Department of Energy-sponsored energy modeling program, to establish a baseline space heating and cooling energy usage. Climate data from Long Branch, NJ was used for analyses. From this, the model may be calibrated, using historical utility bills, to predict the impact of theoretical energy savings measures.

Once annual energy savings from a particular measure have been predicted and the initial capital cost has been estimated, payback periods may be approximated. Equipment cost estimate calculations are provided in Appendix H.

### 4.2.1 Allenwood Elementary School

A model of Allenwood Elementary was created in eQuest to predict heating and cooling loads for the building. To calibrate this model, CDM Smith used electricity bills and natural gas bills from September 2010 through August, 2011. Figure 4.2-1 below compares actual monthly electricity usages, with those predicted by the eQuest model.

**Figure 4.2-1: Allenwood Elementary Electricity Usage**

Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and cooling. It should be noted that these are only estimated usages based on information gathered during CDM Smith's field audit. Figure 4.2-2 presents this information to help the Board visualize where CDM Smith anticipates the electricity is ultimately being used.

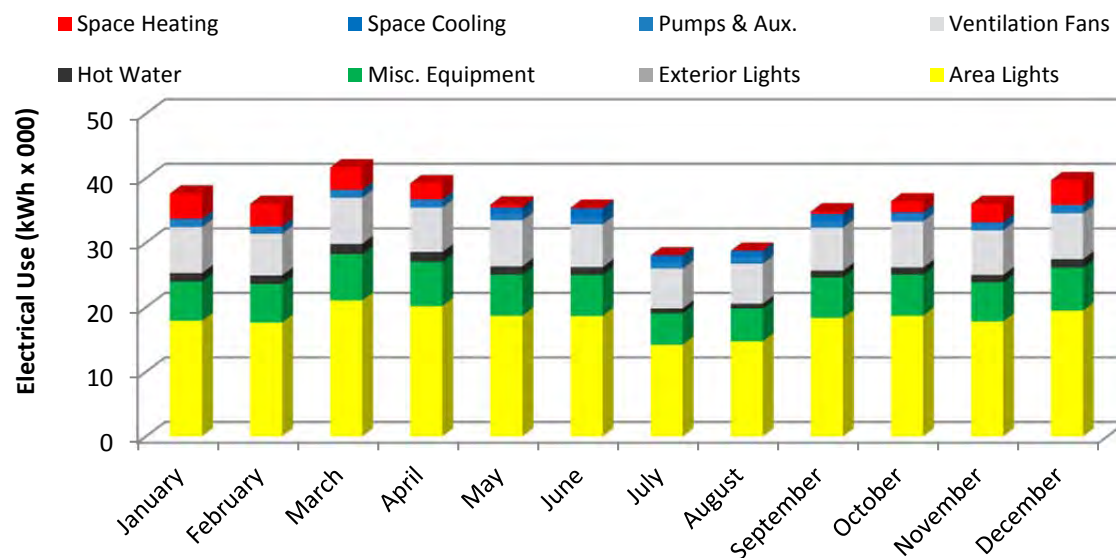
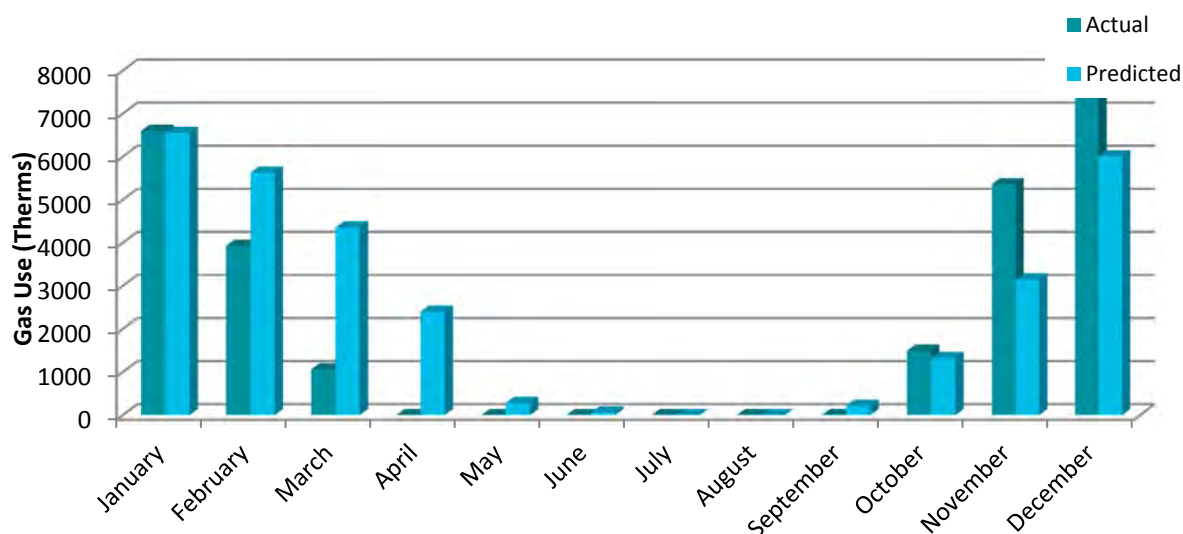
**Figure 4.2-2: Allenwood Elementary Electricity Usage Breakdown**

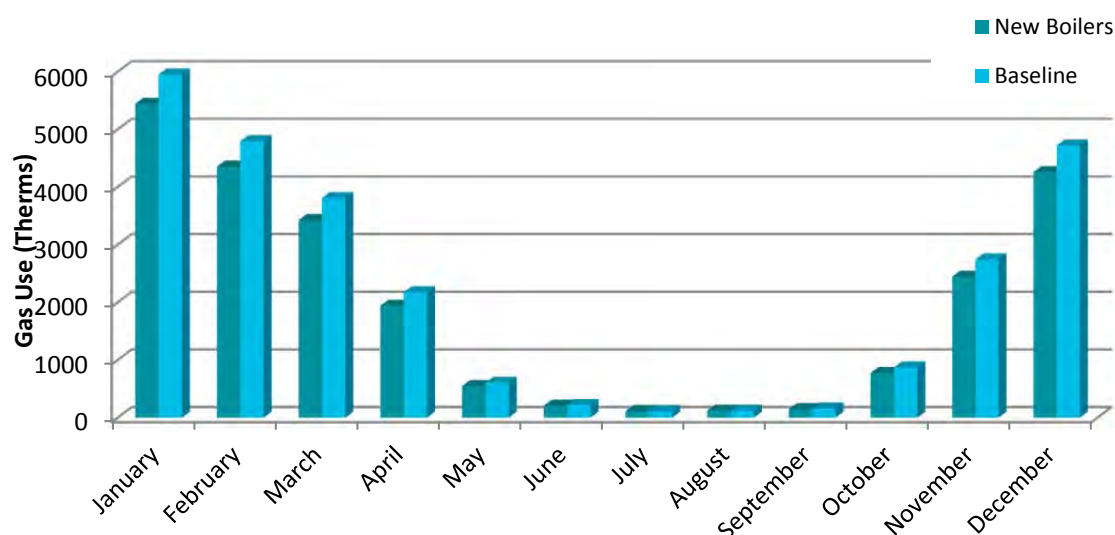
Figure 4.2-3 below compares actual natural gas usage to model-predicted natural gas use.

**Figure 4.2-3: Allenwood Elementary Natural Gas Usage**

Currently the heating boilers are 20 years old and in fair condition. The boilers are gas fired and estimated to be about 80% efficient. The boilers are rated at 3100 MBH and 4000MBH each.

CDM Smith recommends replacing these boilers with a system of high-efficiency, condensing boilers. Based on the building model, and accounting for a 25% safety factor, CDM Smith has calculated a peak heating load of 3000 MBH.

Figure 4.2-4 compares current gas usage with predicted gas usage resulting from a switch to a high-efficiency, condensing boiler. Condensing boilers are modeled with a full-load efficiency of ~90% and return water temperature of 120°F.

**Figure 4.2-4: Allenwood Elementary – Boiler Upgrade - Natural Gas Usage**

Fiscal savings from such an upgrade are then identified in Table 4.2-1 below. Lifetime savings calculations for all ECRM's may be found in Appendix I. It's important to note that these are estimates based on building models, and further investigation is warranted before pursuing boiler replacements.

Due to the improved automation and control within modern condensing boilers, their operation and maintenance costs tend to be less than those of typical cast iron boilers. CDM Smith estimates a cast iron / firetube boiler system will typically cost around \$3,500 per year for regular preventative maintenance, whereas a condensing boiler system would cost around \$2,000 per year. Therefore, replacing the existing boiler with a condensing boiler should result in an operation and maintenance cost savings of \$1,500 per year.

| <b>Table 4.2-1</b>                                 |             |
|----------------------------------------------------|-------------|
| <b>Allenwood Elementary Boiler Upgrade Payback</b> |             |
| Predicted Annual Savings (Therms)                  | 2,503       |
| Total Annual Savings                               | \$ 3,479    |
| Initial Capital Cost of Upgrade                    | \$ 187,500  |
| Incentives**                                       | \$ 4,000    |
| Cost of Upgrade                                    | \$ 185,500  |
| Annual Maintenance Cost Savings (AMCS)             | \$ 1,500    |
| Simple Payback                                     | 52.3        |
| Lifetime Energy Savings (24 years)*                | \$ 115,476  |
| Annual Return on Investment (AROI)                 | -2.27%      |
| Internal Rate of Return (IRR)                      | -3.15%      |
| Net Present Value (NPV)                            | \$ -104,960 |

\*Assumes 2% yearly inflation on natural gas costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$1.00 per MBH

The heating hot water system has multiple large pumps to circulate the water through the heating units. The pumps are on when ever the building needs heating. The building does not require the full flow when the outdoor air temperature is moderate.

The heating water temperature drops less when there is less demand for space heating. A variable frequency drive, or VFD, can be installed to reduce the flow when it is not needed. The VFD can be controlled to maintain the heating hot water return temperature. This measure involves installing a VFD, sensors and controls for each main heating circulation pumps.

| <b>Table 4.2-2</b>                           |           |
|----------------------------------------------|-----------|
| <b>Allenwood Elementary Pump VFD Payback</b> |           |
| Predicted Annual Savings (Therms)            | -71       |
| Predicted Annual Savings (kWh)               | 1,730     |
| Total Annual Savings                         | \$161     |
| Initial Capital Cost of Upgrade              | \$ 7,300  |
| Incentives**                                 | \$ 775    |
| Cost of Upgrade                              | \$ 6,525  |
| Annual Maintenance Cost Savings (AMCS)       | \$ 0      |
| Simple Payback                               | 44.7      |
| Lifetime Energy Savings (15 years)*          | \$ 3,165  |
| Annual Return on Investment (AROI)           | -4.43%    |
| Internal Rate of Return (IRR)                | -8.48%    |
| Net Present Value (NPV)                      | \$ -4,829 |



\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$155 per HP

The original building walls are solid masonry. These walls do not have any insulation installed.

The typical way to add insulation to a masonry building is to install an exterior insulation finishing system, or EIFS. The system consists of a layer of rigid polystyrene insulation and then a simulated stucco finish. EIFS provides a simple, continuous layer of insulation for the entire exterior wall.

This measure is based upon installing 2 inches of polystyrene which equates to an insulation increase of R-8. Table 4.2-3 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-3</b>                                  |            |
|-----------------------------------------------------|------------|
| <b>Allenwood Elementary Wall Insulation Payback</b> |            |
| Predicted Annual Savings (Therms)                   | 3275       |
| Predicted Annual Savings (kWh)                      | 20,700     |
| Total Annual Savings                                | \$ 7,686   |
| Initial Capital Cost of Upgrade                     | \$ 157,648 |
| Incentives**                                        | \$ 0       |
| Cost of Upgrade                                     | \$ 157,648 |
| Annual Maintenance Cost Savings (AMCS)              | \$ 0       |
| Simple Payback                                      | 20.5       |
| Lifetime Energy Savings (20 years)*                 | \$ 194,819 |
| Annual Return on Investment (ARO I)                 | -1.79%     |
| Internal Rate of Return (IRR)                       | 1.95%      |
| Net Present Value (NPV)                             | \$ -16,098 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The original building roof has 2-1/2 inches of polyisocyanurate insulation. This equates to an R-19 roof.

Flat roofs are typically insulated on top of the roof decking. Peaked roofs are insulated on the flat surface under the roof. The flat roofs are insulated with rigid insulation which is taped to allow for drainage. The peaked roof insulation is typically a fibrous, such as cellulose or fiberglass, layed on the ceiling.

This measure is based upon to an insulation increase of R-11, for a total R-value of 30. Table 4.2-4 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-4</b>                                  |            |
|-----------------------------------------------------|------------|
| <b>Allenwood Elementary Roof Insulation Payback</b> |            |
| Predicted Annual Savings (Therms)                   | 1,393      |
| Predicted Annual Savings (kWh)                      | 7,910      |
| Total Annual Savings                                | \$ 3,134   |
| Initial Capital Cost of Upgrade                     | \$ 90,300  |
| Cost of Upgrade                                     | \$ 90,300  |
| Simple Payback                                      | 28.8       |
| Lifetime Energy Savings (20 years)*                 | \$ 79,225  |
| Annual Return on Investment (AROI)                  | --3.20%    |
| Internal Rate of Return (IRR)                       | -1.13%     |
| Net Present Value (NPV)                             | \$ -32,722 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The original building window are single pane with solid aluminum frames. These windows have minimal insulation value. A typical metal frame single pane window have a u value of 1.0.

New windows have many improvements. A premium efficiency window has double or triple pane glass. The glass insulation is further improved by using argon or krypton gas between the panes. Window frames have thermal breaks and they are insulated. The window panes have better weather stripping.

This measure is based upon installing new windows with a u value of 0.35 or less. This window will also have a low e coating. Table 4.2-5 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-5</b>                                 |             |
|----------------------------------------------------|-------------|
| <b>Allenwood Elementary Window Upgrade Payback</b> |             |
| Predicted Annual Savings (Therms)                  | 2,538       |
| Predicted Annual Savings (kWh)                     | 14,380      |
| Total Annual Savings                               | \$ 5,705    |
| Initial Capital Cost of Upgrade                    | \$ 225,000  |
| Incentives**                                       | \$ 0        |
| Cost of Upgrade                                    | \$ 225,000  |
| Annual Maintenance Cost Savings (AMCS)             | \$ 0        |
| Simple Payback                                     | 39.4        |
| Lifetime Energy Savings (24 years)*                | \$ 144,217  |
| Annual Return on Investment (AROI)                 | -4.13%      |
| Internal Rate of Return (IRR)                      | -3.67%      |
| Net Present Value (NPV)                            | \$ -120,189 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The building heating, ventilation and cooling system is controlled by a DDC system. The building has occupied and unoccupied settings. Presently the occupied settings are controlled by schedules assigned to the various spaces. Often the buildings are scheduled totally occupied until the late staff leave. This can have the building occupied for less than 10 people.

Installation of occupancy sensors to control the DDC occupied and unoccupied schedule to increase the number of hours the building is unoccupied. This will reduce the ventilation air, heating setpoints, and hours of cooling. The measure involves installing occupancy sensors in all classrooms and other major spaces and programming the DDC system to control based upon sensors.

| <b>Table 4.2-6</b>                                        |            |
|-----------------------------------------------------------|------------|
| <b>Allenwood Elementary HVAC Occupancy Sensor Payback</b> |            |
| Predicted Annual Savings (Therms)                         | 3,902      |
| Predicted Annual Savings (kWh)                            | 35,670     |
| Total Annual Savings                                      | \$14,538   |
| Initial Capital Cost of Upgrade                           | \$ 80,000  |
| Incentives**                                              | \$ 0       |
| Cost of Upgrade                                           | \$ 80,000  |
| Annual Maintenance Cost Savings (AMCS)                    | \$ 0       |
| Simple Payback                                            | 5.5        |
| Lifetime Energy Savings (15 years)*                       | \$ 260,500 |
| Annual Return on Investment (ARO I)                       | 11.51%     |
| Internal Rate of Return (IRR)                             | 18.64%     |
| Net Present Value (NPV)                                   | \$ 124,526 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

\*\*Per New Jersey Clean Energy Program, this measure is not incentivised

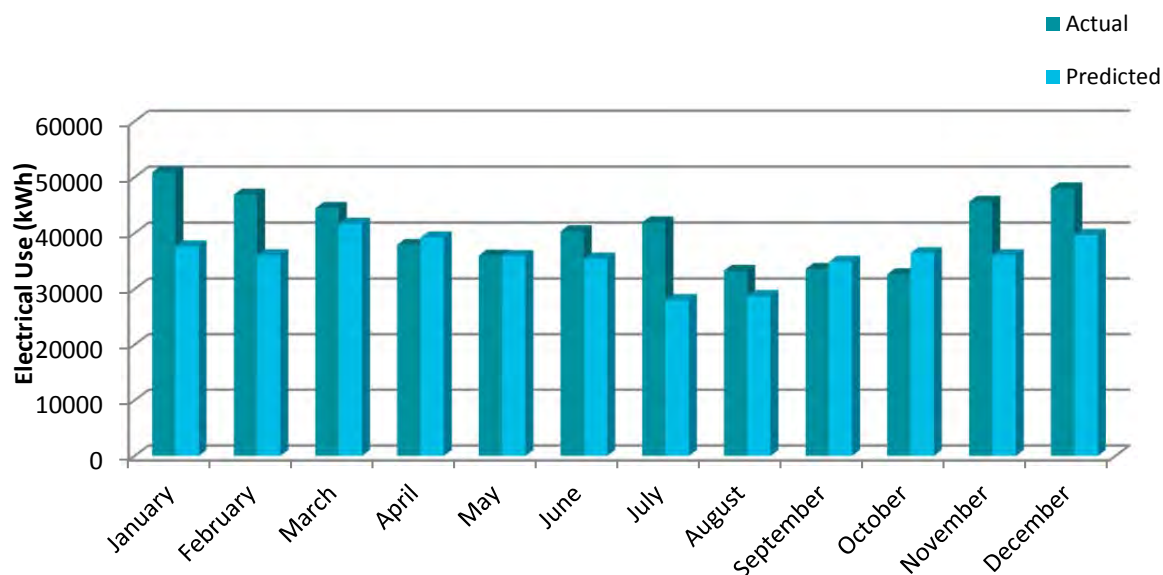
Over several decades, ASHRAE has compiled data pertaining to service lives of most HVAC related equipment. From this, ASHRAE indicates a median service life (life until replacement) for HVAC related equipment that may be used as an estimate for the useful life of HVAC equipment currently in service. For example, ASHRAE indicates a window air conditioning unit has a median service life of 10 years. Therefore, if a window unit has been in service for more than 10 years, the owner may want to consider replacement. Not only will a replacement ensure minimal downtime between units (the unit is replaced before it ceases to function), but it will also maintain rated system efficiency, as efficiency tends to decrease with age.

All major equipment noted during CDM Smith's on site audit is listed in Appendix M, along with estimated age or year of installation. It should be noted that only equipment that was observed at the time of the audit is included. Where equipment ages were not found on the equipment tags, they have been estimated based on the unit appearance or approximate renovation dates. In some cases, service locations may have been estimated based on unit proximity. Additionally, in cases where a unit's manufacturer and/or model could not be determined due to an unreadable, faded, destroyed, or lost tag, manufacturer and model number information has been represented as "unknown".

### 4.2.2 Central Elementary School

A model of Central Elementary was created in eQuest to predict heating and cooling loads for the building. To calibrate this model, CDM Smith used electricity bills and natural gas bills from September 2010 through August, 2011. Figure 4.2-5 below compares actual monthly electricity usages, with those predicted by the eQuest model.

Figure 4.2-5: Central Elementary Electricity Usage



Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and cooling. It should be noted that these are only estimated usages based on information gathered during CDM Smith's field audit. Figure 4.2-6 presents this information to help the Board visualize where CDM Smith anticipates the electricity is ultimately being used.

Figure 4.2-6: Central Elementary Electricity Usage Breakdown

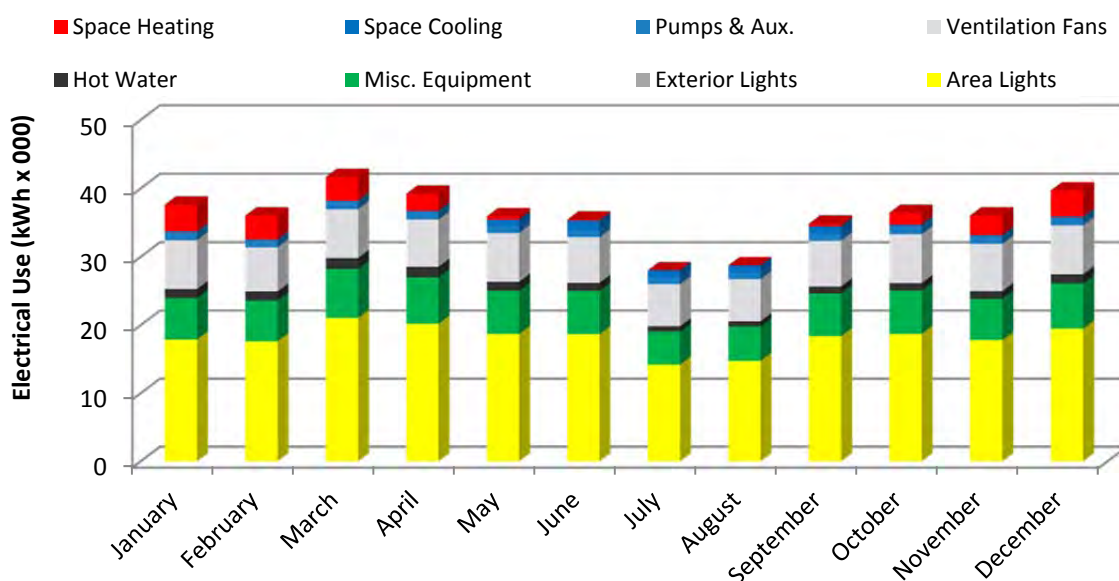
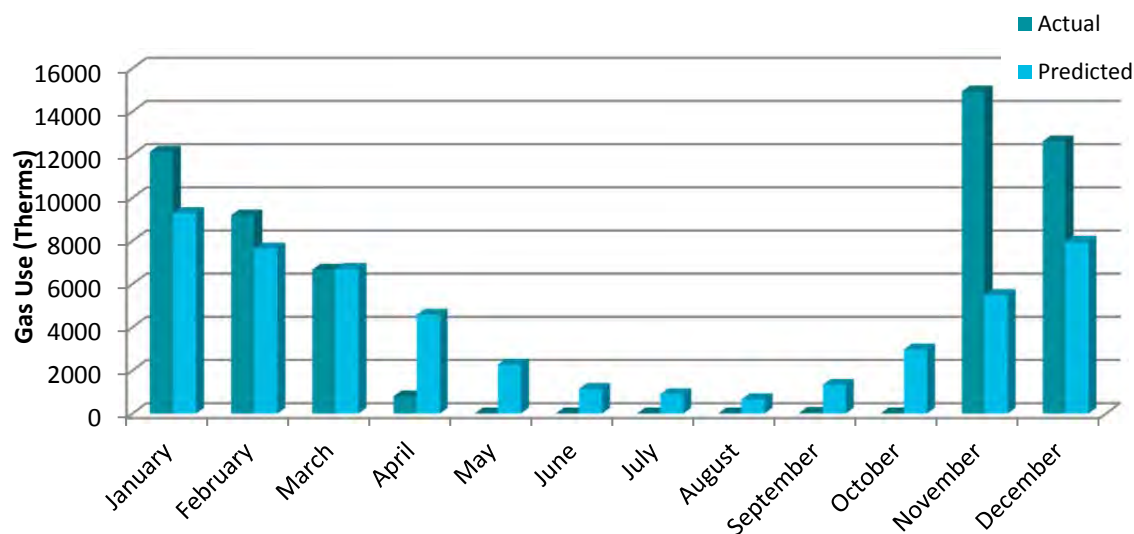


Figure 4.2-7 below compares actual natural gas usage to model-predicted natural gas use.

**Figure 4.2-7: Central Elementary Natural Gas Usage**

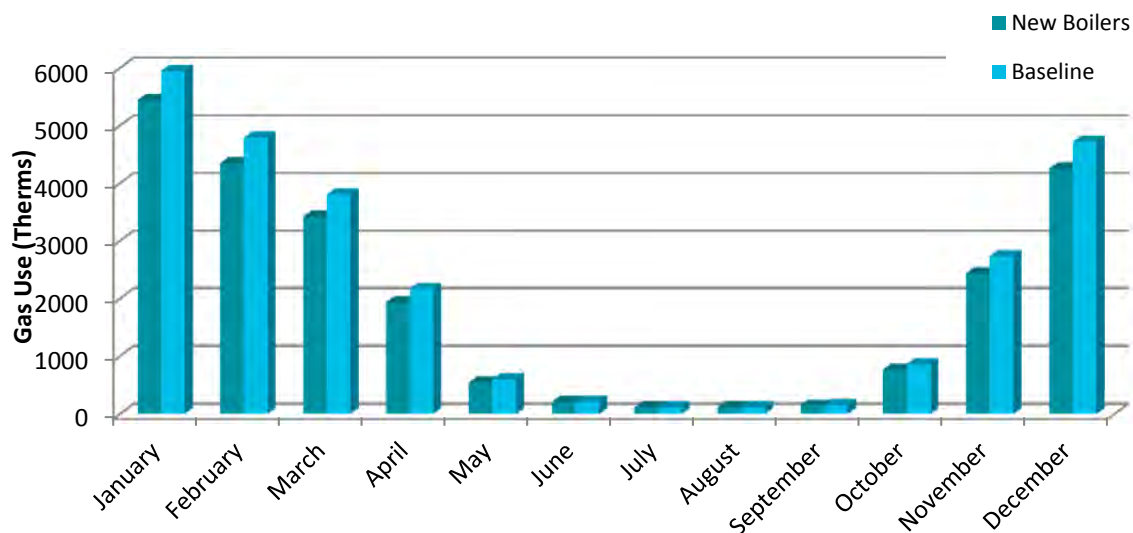


Currently the heating boilers are 30 years old and in fair condition. The boilers are gas fired and estimated to be about 80% efficient. The boilers are rated at 2487 MBH each.

CDM Smith recommends replacing these boilers with a system of high-efficiency, steam boilers. These boilers should be properly sized to match to installed radiation capacity.

Figure 4.2-8 compares current gas usage with predicted gas usage resulting from a switch to a high-efficiency steam boiler. The boilers are modeled with a full-load efficiency of 82%.

**Figure 4.2-8: Central Elementary – Boiler Upgrade - Natural Gas Usage**



Fiscal savings from such an upgrade are then identified in Table 4.2-7 below. Lifetime savings calculations for all ECRM's may be found in Appendix I. It's important to note that these are estimates based on building models, and further investigation is warranted before pursuing boiler replacements.

| <b>Table 4.2-7</b>                               |            |
|--------------------------------------------------|------------|
| <b>Central Elementary Boiler Upgrade Payback</b> |            |
| Predicted Annual Savings (Therms)                | 2153       |
| Total Annual Savings                             | \$ 2,990   |
| Initial Capital Cost of Upgrade                  | \$ 143,228 |
| Incentives**                                     | \$ 7,000   |
| Cost of Upgrade                                  | \$ 134,228 |
| Annual Maintenance Cost Savings (AMCS)           | \$0        |
| Simple Payback                                   | 45.6       |
| Lifetime Energy Savings (24 years)*              | \$ 77,655  |
| Annual Return on Investment (AROI)               | -3.37%     |
| Internal Rate of Return (IRR)                    | -6.09%     |
| Net Present Value (NPV)                          | \$ -75,095 |

\*Assumes 2% yearly inflation on natural gas costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$1.00 per MBH

The original building walls are solid masonry. These walls do not have any insulation installed. The typical way to add insulation to a masonry building is to install an exterior insulation finishing system, or EIFS. The system consists of a layer of rigid polystyrene insulation and then a simulated stucco finish. EIFS provides a simple, continuous layer of insulation for the entire exterior wall.

This measure is based upon installing 2 inches of polystyrene which equates to an insulation increase of R-8. Table 4.2-8 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-8</b>                                |             |
|---------------------------------------------------|-------------|
| <b>Central Elementary Wall Insulation Payback</b> |             |
| Predicted Annual Savings (Therms)                 | 2659        |
| Predicted Annual Savings (kWh)                    | 7,980       |
| Total Annual Savings                              | \$ 4,372    |
| Initial Capital Cost of Upgrade                   | \$ 226,150  |
| Incentives**                                      | \$ 0        |
| Cost of Upgrade                                   | \$ 226,150  |
| Annual Maintenance Cost Savings (AMCS)            | \$ 0        |
| Simple Payback                                    | 51.7        |
| Lifetime Energy Savings (20 years)*               | \$ 109,326  |
| Annual Return on Investment (AROI)                | -4.73%      |
| Internal Rate of Return (IRR)                     | -5.78%      |
| Net Present Value (NPV)                           | \$ -146,614 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The building heating, ventilation and cooling system is controlled by a DDC system. The building has occupied and unoccupied settings. Presently the occupied settings are controlled by schedules assigned to the various spaces. Often the buildings are scheduled totally occupied until the late staff leave. This can have the building occupied for less than 10 people.

Installation of occupancy sensors to control the DDC occupied and unoccupied schedule to increase the number of hours the building is unoccupied. This will reduce the ventilation air, heating setpoints, and hours of cooling. The measure involves installing occupancy sensors in all classrooms and other major spaces and programming the DDC system to control based upon sensors.

| Table 4.2-9<br>Central Elementary HVAC Occupancy Sensor Payback |            |
|-----------------------------------------------------------------|------------|
| Predicted Annual Savings (Therms)                               | 679        |
| Predicted Annual Savings (kWh)                                  | 18,550     |
| Total Annual Savings                                            | \$3,419    |
| Initial Capital Cost of Upgrade                                 | \$ 90,000  |
| Incentives**                                                    | \$ 0       |
| Cost of Upgrade                                                 | \$ 90,000  |
| Annual Maintenance Cost Savings (AMCS)                          | \$ 0       |
| Simple Payback                                                  | 26.3       |
| Lifetime Energy Savings (15 years)*                             | \$ 62,612  |
| Annual Return on Investment (AROI)                              | -2.78%     |
| Internal Rate of Return (IRR)                                   | -3.77%     |
| Net Present Value (NPV)                                         | \$ -38,919 |

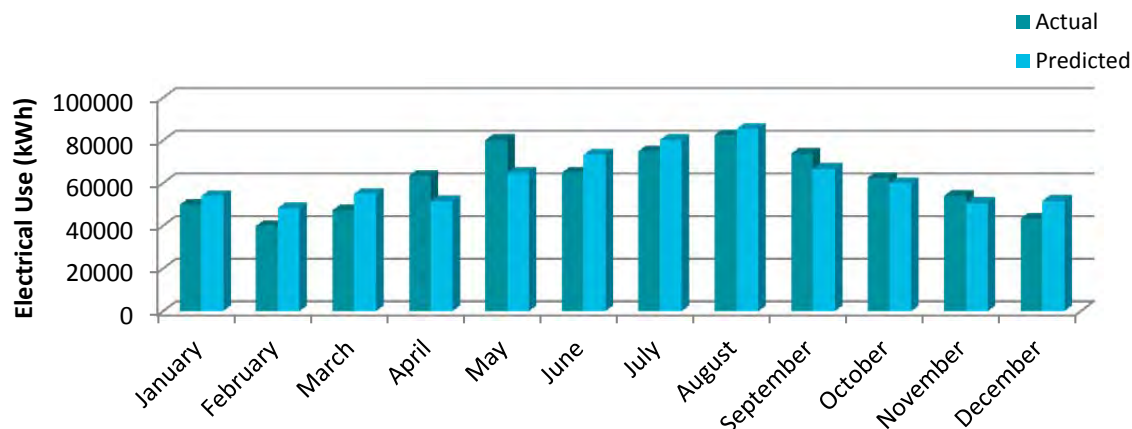
\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

\*\*Per New Jersey Clean Energy Program, this measure is not incentivised

### 4.2.3 Old Mill Elementary School

A model of Old Mill Elementary was created in eQuest to predict heating and cooling loads for the building. To calibrate this model, CDM Smith used electricity bills and natural gas bills from September 2010 through August, 2011. Figure 4.2-9 below compares actual monthly electricity usages, with those predicted by the eQuest model.

Figure 4.2-9: Old Mill Elementary Electricity Usage





Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and cooling. It should be noted that these are only estimated usages based on information gathered during CDM Smith's field audit. Figure 4.2-10 presents this information to help the Board visualize where CDM Smith anticipates the electricity is ultimately being used.

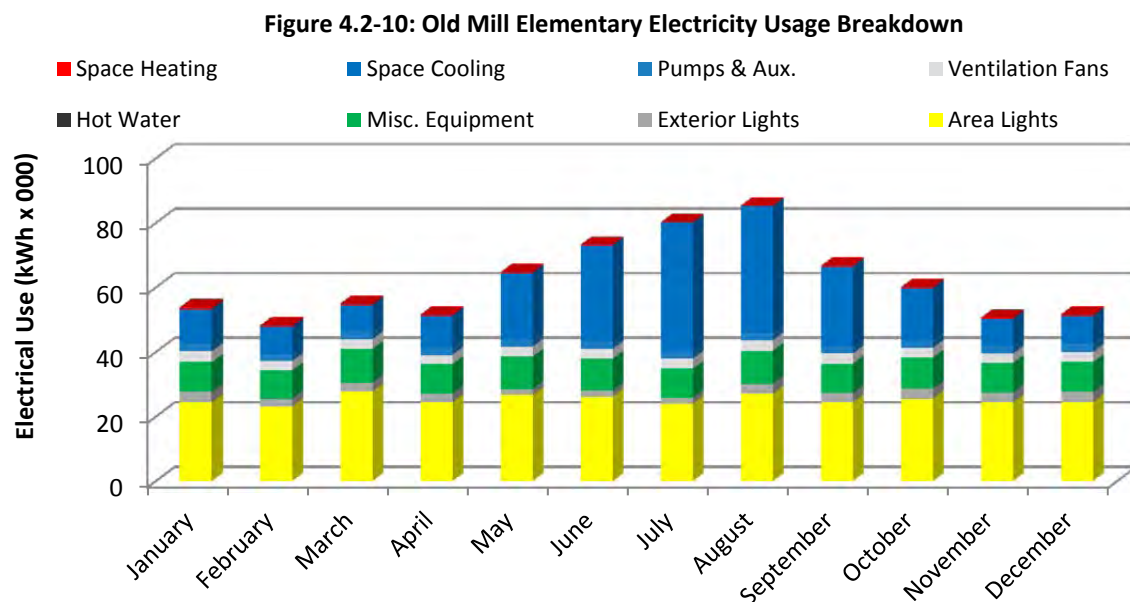
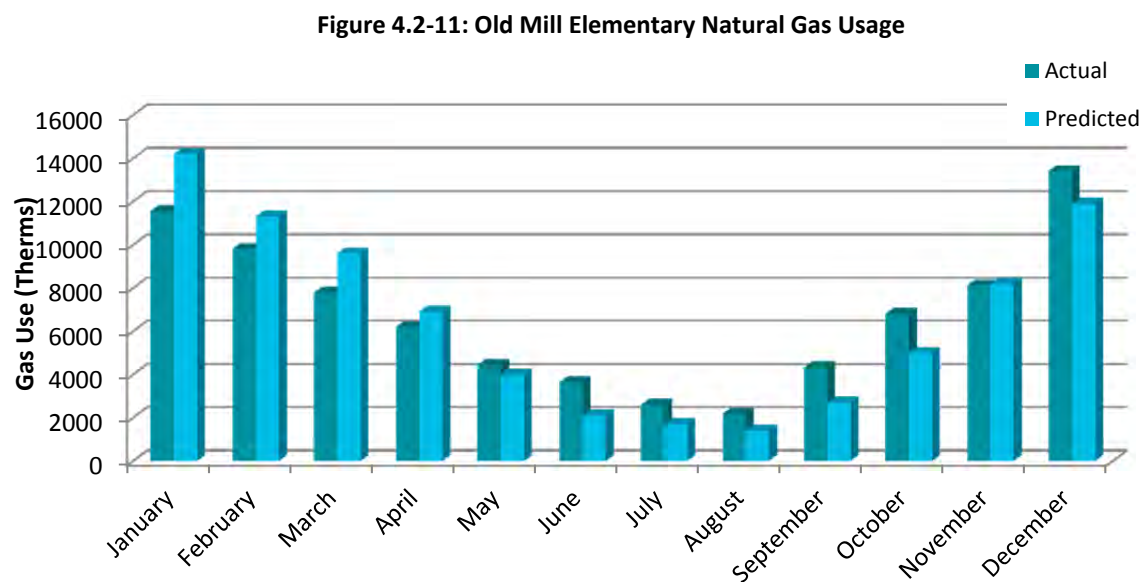


Figure 4.2-11 below compares actual natural gas usage to model-predicted natural gas use.



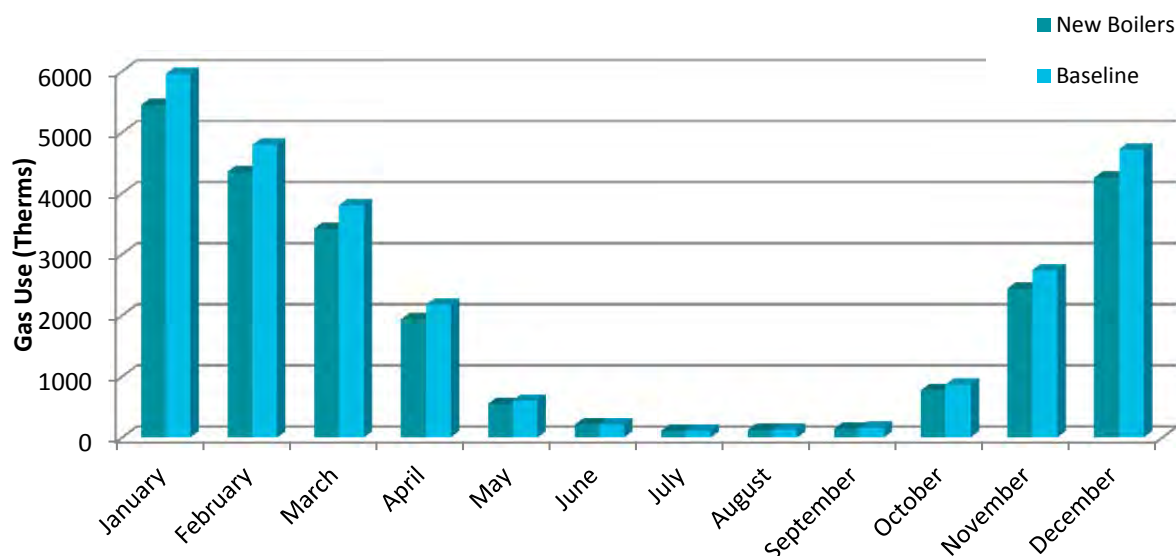
Currently the heating boilers are 20 years old and in fair condition. The boilers are gas fired and estimated to be about 70% efficient. The boilers are rated at 3582 MBH each.



CDM Smith recommends replacing these boilers with a system of high-efficiency, condensing boilers. Based on the building model, and accounting for a 25% safety factor, CDM Smith has calculated a peak heating load of 3000 MBH.

Figure 4.2-12 compares current gas usage with predicted gas usage resulting from a switch to a high-efficiency, condensing boiler. Condensing boilers are modeled with a full-load efficiency of ~90% and return water temperature of 120°F.

**Figure 4.2-12: Old Mill Elementary – Boiler Upgrade - Natural Gas Usage**



Fiscal savings from such an upgrade are then identified in Table 4.2-10 below. Lifetime savings calculations for all ECRM's may be found in Appendix I. It's important to note that these are estimates based on building models, and further investigation is warranted before pursuing boiler replacements.

Due to the improved automation and control within modern condensing boilers, their operation and maintenance costs tend to be less than those of typical cast iron boilers. CDM Smith estimates a cast iron / firetube boiler system will typically cost around \$3,500 per year for regular preventative maintenance, whereas a condensing boiler system would cost around \$2,000 per year. Therefore, replacing the existing boiler with a condensing boiler should result in an operation and maintenance cost savings of \$1,500 per year.

| Table 4.2-10                               |            |
|--------------------------------------------|------------|
| Old Mill Elementary Boiler Upgrade Payback |            |
| Predicted Annual Savings (Therms)          | 20,760     |
| Total Annual Savings                       | \$ 23,044  |
| Initial Capital Cost of Upgrade            | \$ 187,500 |
| Incentives**                               | \$ 4,000   |
| Cost of Upgrade                            | \$ 183,500 |
| Annual Maintenance Cost Savings (AMCS)     | \$ 1500    |

| <b>Table 4.2-10</b><br><b>Old Mill Elementary Boiler Upgrade Payback</b> |            |
|--------------------------------------------------------------------------|------------|
| Simple Payback                                                           | 8.0        |
| Lifetime Energy Savings (24 years)*                                      | \$ 701,029 |
| Annual Return on Investment (AROI)                                       | 5.89%      |
| Internal Rate of Return (IRR)                                            | 11.05%     |
| Net Present Value (NPV)                                                  | \$ 130,212 |

\*Assumes 2% yearly inflation on natural gas costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$1.00 per MBH

The heating hot water system has multiple large pumps to circulate the water through the heating units. The pumps are on when ever the building needs heating. The building does not require the full flow when the outdoor air temperature is moderate.

The heating water temperature drops less when there is less demand for space heating. A variable frequency drive, or VFD, can be installed to reduce the flow when it is not needed. The VFD can be controlled to maintain the heating hot water return temperature. This measure involves installing a VFD, sensors and controls for each main heating circulation pumps.

| <b>Table 4.2-11</b><br><b>Old Mill Elementary Pump VFD Payback</b> |           |
|--------------------------------------------------------------------|-----------|
| Predicted Annual Savings (Therms)                                  | -500      |
| Predicted Annual Savings (kWh)                                     | 12,080    |
| Total Annual Savings                                               | \$ 1,181  |
| Initial Capital Cost of Upgrade                                    | \$ 7300   |
| Incentives**                                                       | \$ 775    |
| Cost of Upgrade                                                    | \$ 6525   |
| Annual Maintenance Cost Savings (AMCS)                             | \$ 0      |
| Simple Payback                                                     | 6.2       |
| Lifetime Energy Savings (15 years)*                                | \$ 22,688 |
| Annual Return on Investment (AROI)                                 | 9.51%     |
| Internal Rate of Return (IRR)                                      | 17.11%    |
| Net Present Value (NPV)                                            | \$ 10,424 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$155 per HP

The original building window are single pane with solid aluminum frames. These windows have minimal insulation value. A typical metal frame single pane window have a u value of 1.0.

New windows have many improvements. A premium efficiency window has double or triple pane glass. The glass insulation is further improved by using argon or krypton gas between the panes. Window frames have thermal breaks and they are insulated. The window panes have better weather stripping.

This measure is based upon installing new windows with a u value of 0.35 or less. This window will also have a low e coating. Table 4.2-12 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-12</b>                               |           |
|---------------------------------------------------|-----------|
| <b>Old Mill Elementary Window Upgrade Payback</b> |           |
| Predicted Annual Savings (Therms)                 | 2,900     |
| Predicted Annual Savings (kWh)                    | 13,520    |
| Total Annual Savings                              | \$ 5,162  |
| Initial Capital Cost of Upgrade                   | \$ 99,809 |
| Incentives**                                      | \$ 0      |
| Cost of Upgrade                                   | \$ 99,809 |
| Annual Maintenance Cost Savings (AMCS)            | \$ 0      |
| Simple Payback                                    | 19.3      |
| Lifetime Energy Savings (24 years)*               | \$ 91,802 |
| Annual Return on Investment (AROI)                | -1.49%    |
| Internal Rate of Return (IRR)                     | -2.49%    |
| Net Present Value (NPV)                           | \$ -5,022 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The building heating, ventilation and cooling system is controlled by a DDC system. The building has occupied and unoccupied settings. Presently the occupied settings are controlled by schedules assigned to the various spaces. Often the buildings are scheduled totally occupied until the late staff leave. This can have the building occupied for less than 10 people.

Installation of occupancy sensors to control the DDC occupied and unoccupied schedule to increase the number of hours the building is unoccupied. This will reduce the ventilation air, heating setpoints, and hours of cooling. The measure involves installing occupancy sensors in all classrooms and other major spaces and programming the DDC system to control based upon sensors.

| <b>Table 4.2-13</b>                                      |            |
|----------------------------------------------------------|------------|
| <b>Old Mill Elementary HVAC Occupancy Sensor Payback</b> |            |
| Predicted Annual Savings (Therms)                        | 20,500     |
| Predicted Annual Savings (kWh)                           | 64,850     |
| Total Annual Savings                                     | \$32,074   |
| Initial Capital Cost of Upgrade                          | \$ 88,000  |
| Incentives**                                             | \$ 0       |
| Cost of Upgrade                                          | \$ 88,000  |
| Simple Payback                                           | 2.7        |
| Lifetime Energy Savings (15 years)*                      | \$ 566,835 |
| Annual Return on Investment (AROI)                       | 29.78%     |
| Internal Rate of Return (IRR)                            | 38.35%     |
| Net Present Value (NPV)                                  | \$ 357,496 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

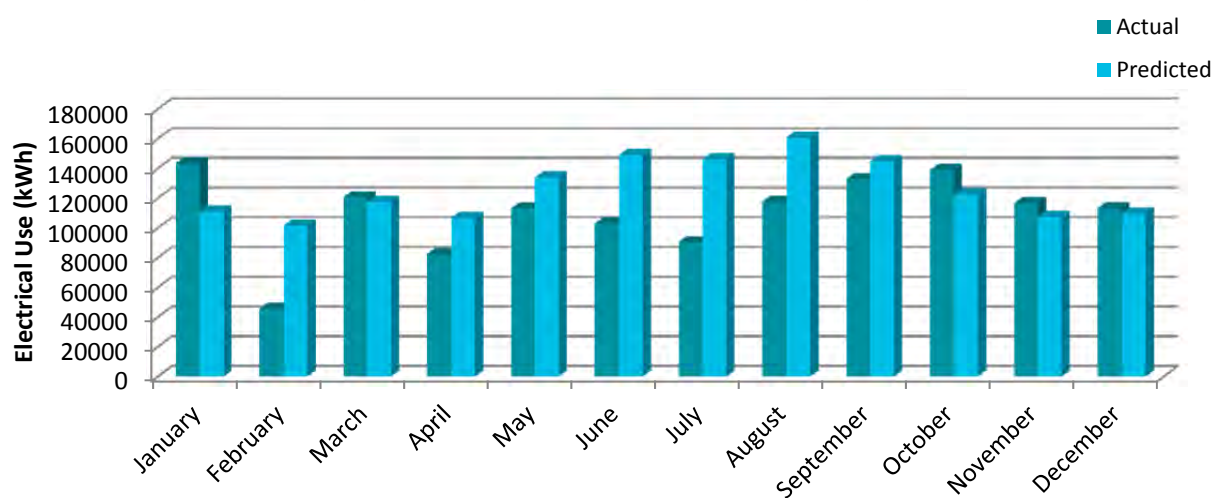
\*\*Per New Jersey Clean Energy Program, this measure is not incentivised

All major equipment noted during CDM Smith's on site audit is listed in Appendix M.

#### 4.2.4 Wall Intermediate School

A model of Wall Intermediate School was created in eQuest to predict heating and cooling loads for the building. To calibrate this model, CDM Smith used electricity bills and natural gas bills from September 2010 through August 2011. Figure 4.2-13 below compares actual monthly electricity usages, with those predicted by the eQuest model. Historical monthly usages were averaged for each month observed over multiple years. For example, usage during the month of June was averaged for the three years, to yield an approximate average usage during the month of June.

**Figure 4.2-13: Wall Intermediate Electricity Usage**



Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and cooling. It should be noted that these are only estimated usages based on information gathered during CDM Smith's field audit. Figure 4.2-14 presents this information to help the Board visualize where CDM Smith anticipates the electricity is ultimately being used.

**Figure 4.2-14: Wall Intermediate Electricity Usage Breakdown**

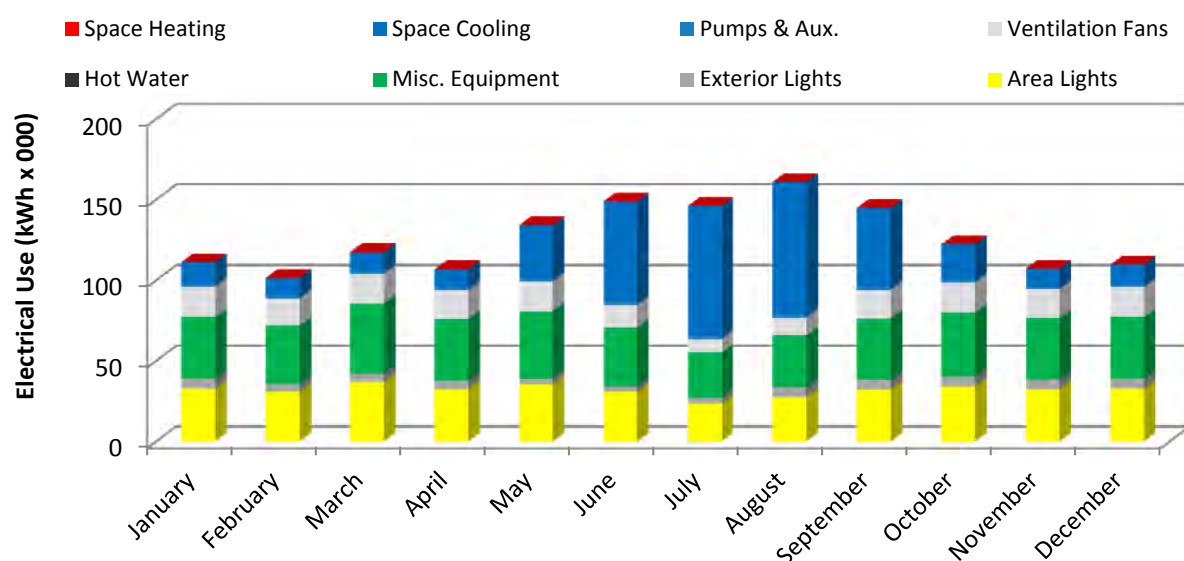
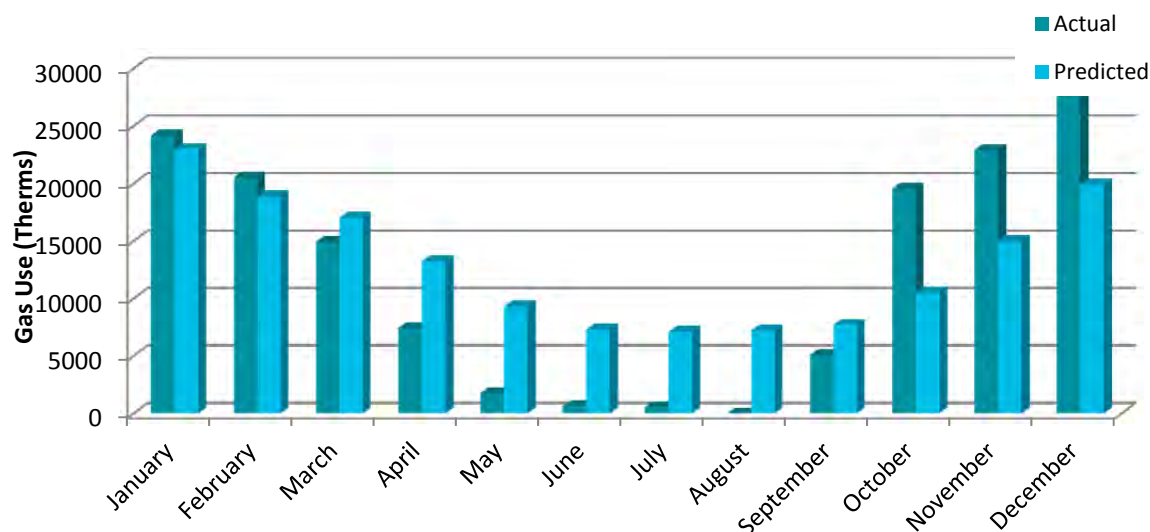


Figure 4.2-15 below compares actual natural gas usage to model-predicted natural gas use.

**Figure 4.2-15: Wall Intermediate Natural Gas Usage**

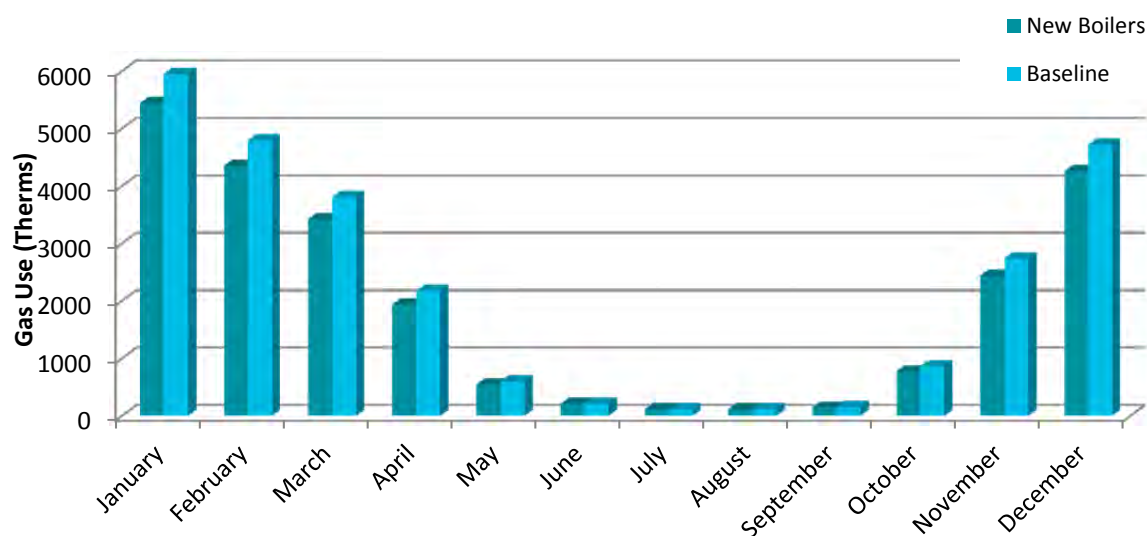


Currently the heating boilers are 20 years old and in fair condition. The boilers are gas fired and estimated to be about 80% efficient. The boilers are rated at 4025 MBH each.

CDM Smith recommends replacing these boilers with a system of high-efficiency, condensing boilers. Based on the building model, and accounting for a 25% safety factor, CDM Smith has calculated a peak heating load of 4000 MBH.

Figure 4.2-16 compares current gas usage with predicted gas usage resulting from a switch to a high-efficiency, condensing boiler. Condensing boilers are modeled with a full-load efficiency of ~90% and return water temperature of 120°F.

**Figure 4.2-16: Wall Intermediate Elementary – Boiler Upgrade - Natural Gas Usage**



Fiscal savings from such an upgrade are then identified in Table 4.2-14 below. Lifetime savings calculations for all ECRM's may be found in Appendix I. It's important to note that these are estimates based on building models, and further investigation is warranted before pursuing boiler replacements.

Due to the improved automation and control within modern condensing boilers, their operation and maintenance costs tend to be less than those of typical cast iron boilers. CDM Smith estimates a cast iron / firetube boiler system will typically cost around \$3,500 per year for regular preventative maintenance, whereas a condensing boiler system would cost around \$2,000 per year. Therefore, replacing the existing boiler with a condensing boiler should result in an operation and maintenance cost savings of \$1,500 per year.

| <b>Table 4.2-14</b>                             |            |
|-------------------------------------------------|------------|
| <b>Wall Intermediate Boiler Upgrade Payback</b> |            |
| Predicted Annual Savings (Therms)               | 21,000     |
| Total Annual Savings                            | \$23,520   |
| Initial Capital Cost of Upgrade                 | \$ 187,500 |
| Incentives**                                    | \$ 4,000   |
| Cost of Upgrade                                 | \$ 183,500 |
| Annual Maintenance Cost Savings (AMCS)          | \$ 1,500   |
| Simple Payback                                  | 7.8        |
| Lifetime Energy Savings (24 years)*             | \$ 508,736 |
| Annual Return on Investment (AROI)              | 8.65%      |
| Internal Rate of Return (IRR)                   | 14.02%     |
| Net Present Value (NPV)                         | \$ 313,403 |

\*Assumes 2% yearly inflation on natural gas costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$1.00 per MBH

The heating hot water system has multiple large pumps to circulate the water through the heating units. The pumps are on when ever the building needs heating. The building does not require the full flow when the outdoor air temperature is moderate.

The heating water temperature drops less when there is less demand for space heating. A variable frequency drive, or VFD, can be installed to reduce the flow when it is not needed. The VFD can be controlled to maintain the heating hot water return temperature. This measure involves installing a VFD, sensors and controls for each main heating circulation pumps.

| <b>Table 4.2-15</b>                       |          |
|-------------------------------------------|----------|
| <b>Wall Intermediate Pump VFD Payback</b> |          |
| Predicted Annual Savings (Therms)         | -300     |
| Predicted Annual Savings (kWh)            | 7,200    |
| Total Annual Savings                      | \$ 678   |
| Initial Capital Cost of Upgrade           | \$ 7,300 |
| Incentives**                              | \$ 775   |
| Cost of Upgrade                           | \$ 6,525 |
| Annual Maintenance Cost Savings (AMCS)    | \$ 0     |

| <b>Table 4.2-15</b>                       |           |
|-------------------------------------------|-----------|
| <b>Wall Intermediate Pump VFD Payback</b> |           |
| Simple Payback                            | 10.8      |
| Lifetime Energy Savings (15 years)*       | \$ 13,044 |
| Annual Return on Investment (AROI)        | 2.62%     |
| Internal Rate of Return (IRR)             | 7.57%     |
| Net Present Value (NPV)                   | \$ 2,889  |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$155 per HP

The original building walls are solid masonry. These walls do not have any insulation installed.

The typical way to add insulation to a masonry building is to install an exterior insulation finishing system, or EIFS. The system consists of a layer of rigid polystyrene insulation and then a simulated stucco finish. EIFS provides a simple, continuous layer of insulation for the entire exterior wall.

This measure is based upon installing 2 inches of polystyrene which equates to an insulation increase of R-8. Table 4.2-16 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-16</b>                              |            |
|--------------------------------------------------|------------|
| <b>Wall Intermediate Wall Insulation Payback</b> |            |
| Predicted Annual Savings (Therms)                | 14,500     |
| Predicted Annual Savings (kWh)                   | 68,000     |
| Total Annual Savings                             | \$ 25,814  |
| Initial Capital Cost of Upgrade                  | \$ 252,000 |
| Incentives                                       | \$ 0       |
| Cost of Upgrade                                  | \$ 252,000 |
| Annual Maintenance Cost Savings (AMCS)           | \$ 0       |
| Simple Payback                                   | 9.8        |
| Lifetime Energy Savings (20 years)*              | \$ 651,853 |
| Annual Return on Investment (AROI)               | 3.58%      |
| Internal Rate of Return (IRR)                    | 10.33%     |
| Net Present Value (NPV)                          | \$ 221,789 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The original building window are single pane with solid aluminum frames. These windows have minimal insulation value. A typical metal frame single pane window have a u value of 1.0.

New windows have many improvements. A premium efficiency window has double or triple pane glass. The glass insulation is further improved by using argon or krypton gas between the panes. Window frames have thermal breaks and they are insulated. The window panes have better weather stripping.

This measure is based upon installing new windows with a u value of 0.35 or less. This window will also have a low e coating. Table 4.2-17 demonstrates the potential payback from such an implementation.



| <b>Table 4.2-17</b>                             |            |
|-------------------------------------------------|------------|
| <b>Wall Intermediate Window Upgrade Payback</b> |            |
| Predicted Annual Savings (Therms)               | 1,200      |
| Predicted Annual Savings (kWh)                  | 5,900      |
| Total Annual Savings                            | \$ 2,175   |
| Initial Capital Cost of Upgrade                 | \$ 73,550  |
| Incentives                                      | \$ 0       |
| Cost of Upgrade                                 | \$ 73,550  |
| Annual Maintenance Cost Savings (AMCS)          | \$ 0       |
| Simple Payback                                  | 33.8       |
| Lifetime Energy Savings (24 years)*             | \$ 54,977  |
| Annual Return on Investment (AROI)              | -3.71%     |
| Internal Rate of Return (IRR)                   | -2.46%     |
| Net Present Value (NPV)                         | \$ -33,595 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The building heating, ventilation and cooling system is controlled by a DDC system. The building has occupied and unoccupied settings. Presently the occupied settings are controlled by schedules assigned to the various spaces. Often the buildings are scheduled totally occupied until the late staff leave. This can have the building occupied for less than 10 people.

Installation of occupancy sensors to control the DDC occupied and unoccupied schedule to increase the number of hours the building is unoccupied. This will reduce the ventilation air, heating setpoints, and hours of cooling. The measure involves installing occupancy sensors in all classrooms and other major spaces and programming the DDC system to control based upon sensors.

| <b>Table 4.2-18</b>                                    |            |
|--------------------------------------------------------|------------|
| <b>Wall Intermediate HVAC Occupancy Sensor Payback</b> |            |
| Predicted Annual Savings (Therms)                      | 8,900      |
| Predicted Annual Savings (kWh)                         | -16,500    |
| Total Annual Savings                                   | \$7,645    |
| Initial Capital Cost of Upgrade                        | \$ 138,000 |
| Incentives**                                           | \$ 0       |
| Cost of Upgrade                                        | \$ 138,000 |
| Annual Maintenance Cost Savings (AMCS)                 | \$ 0       |
| Simple Payback                                         | 18.1       |
| Lifetime Energy Savings (15 years)*                    | \$ 129,172 |
| Annual Return on Investment (AROI)                     | -1.13%     |
| Internal Rate of Return (IRR)                          | -0.79%     |
| Net Present Value (NPV)                                | \$ -36,130 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

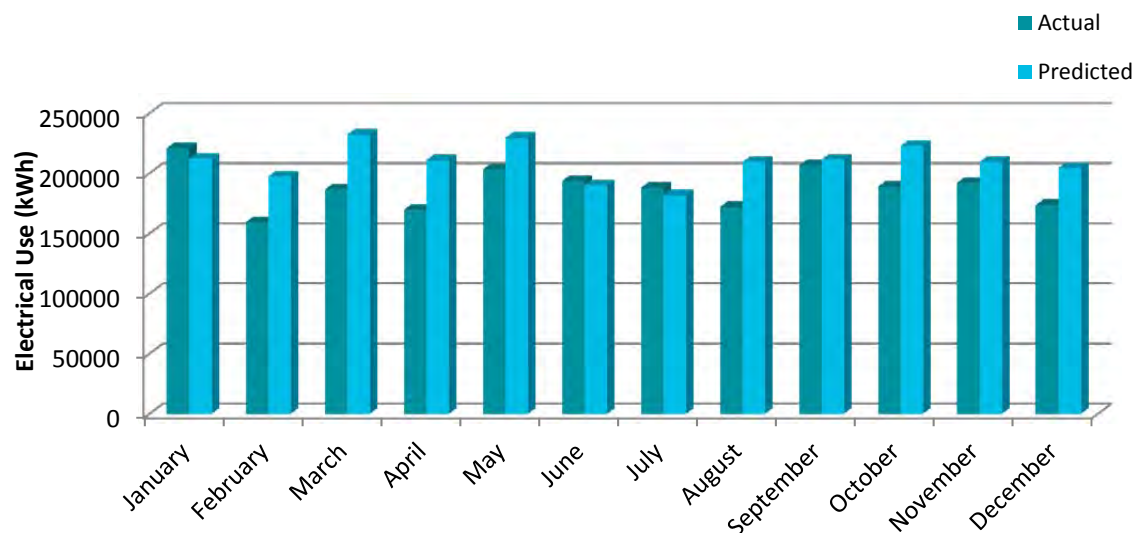
\*\*Per New Jersey Clean Energy Program, this measure is not incentivised



### 4.2.5 Wall High School

A model of Wall High School was created in eQuest to predict heating and cooling loads for the building. To calibrate this model, CDM Smith used electricity bills and natural gas bills from September 2010 through August 2011. Figure 4.2-17 below compares actual monthly electricity usages, with those predicted by the eQuest model.

**Figure 4.2-17: Wall High School Electricity Usage**



Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and cooling. It should be noted that these are only estimated usages based on information gathered during CDM Smith's field audit. Figure 4.2-18 presents this information to help the Board visualize where CDM Smith anticipates the electricity is ultimately being used.

**Figure 4.2-18: Wall High School Electricity Usage Breakdown**

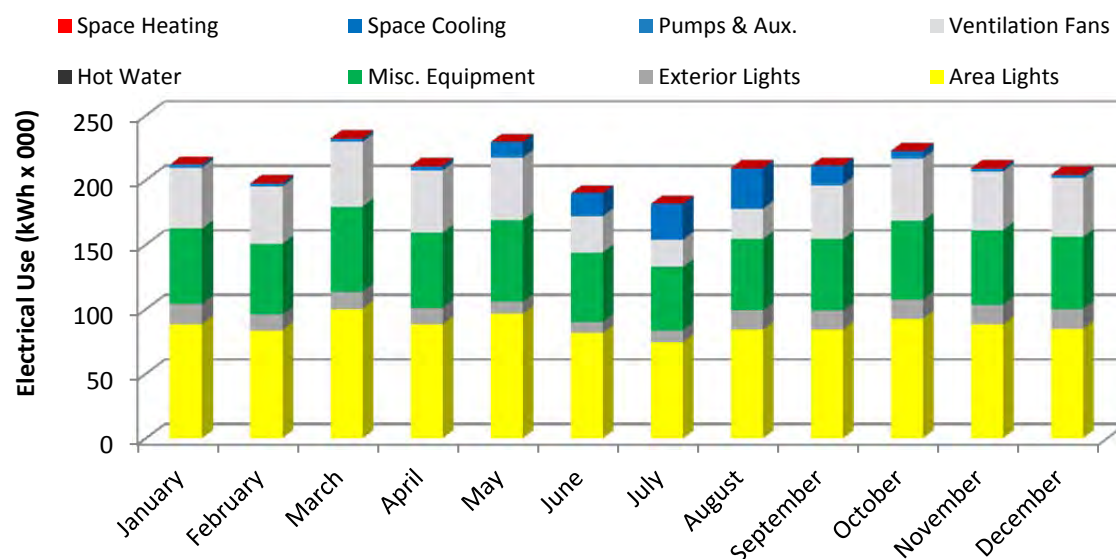
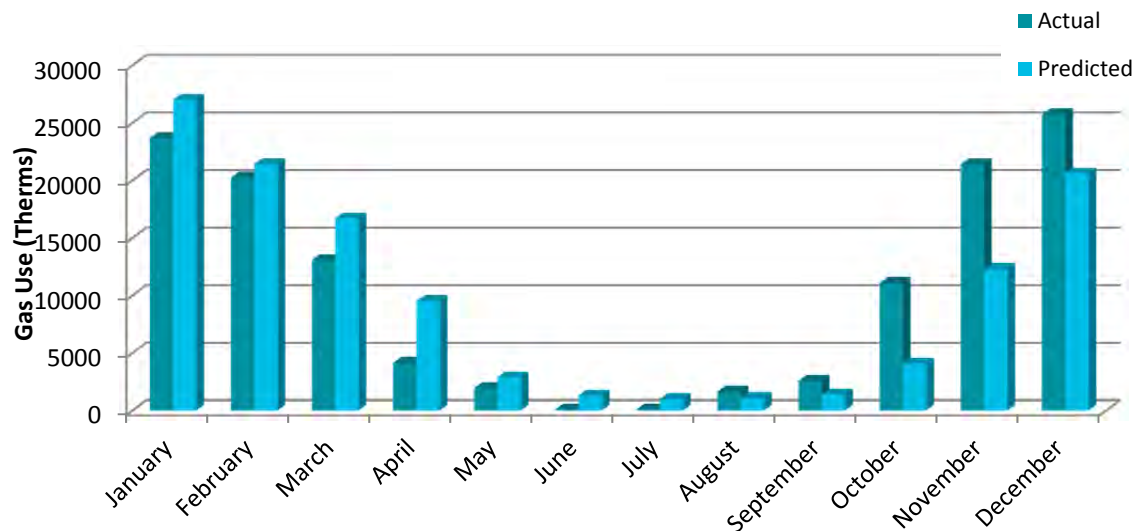


Figure 4.2-19 below compares actual natural gas usage to model-predicted natural gas use.

**Figure 4.2-19: Wall High School Natural Gas Usage**

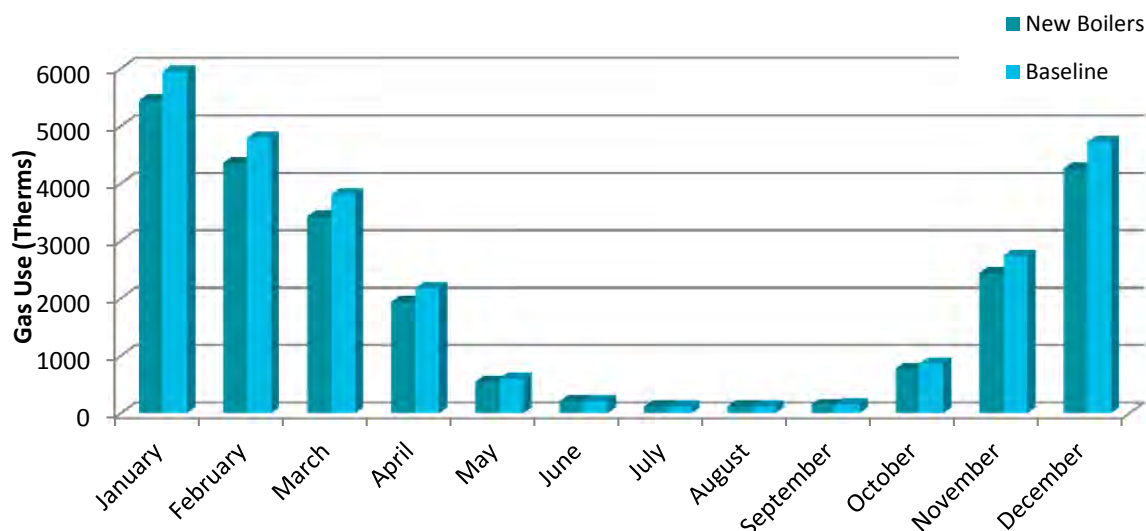


Currently the three heating boilers are 50 years old and in fair condition. The boilers are gas fired and estimated to be about 75% efficient. The boilers are rated at 3588 MBH each.

CDM Smith recommends replacing these boilers with a system of high-efficiency, steam boilers. These boilers should be properly sized to match to installed radiation capacity.

Figure 4.2-20 compares current gas usage with predicted gas usage resulting from a switch to a high-efficiency steam boiler. The boilers are modeled with a full-load efficiency of 82%.

**Figure 4.2-20: Wall High School – Boiler Upgrade - Natural Gas Usage**



Fiscal savings from such an upgrade are then identified in Table 4.2-19 below. Lifetime savings calculations for all ECRM's may be found in Appendix I. It's important to note that these are estimates based on building models, and further investigation is warranted before pursuing boiler replacements.

| <b>Table 4.2-19</b>                            |            |
|------------------------------------------------|------------|
| <b>Wall High School Boiler Upgrade Payback</b> |            |
| Predicted Annual Savings (Therms)              | 7,900      |
| Total Annual Savings                           | \$ 9,480   |
| Initial Capital Cost of Upgrade                | \$ 210,000 |
| Incentives**                                   | \$ 7,000   |
| Cost of Upgrade                                | \$ 203,000 |
| Annual Maintenance Cost Savings (AMCS)         | \$ 1,500   |
| Simple Payback                                 | 21.0       |
| Lifetime Energy Savings (24 years)*            | \$ 288,399 |
| Annual Return on Investment (AROI)             | 0.59%      |
| Internal Rate of Return (IRR)                  | 2.93%      |
| Net Present Value (NPV)                        | \$ -1,600  |

\* Assumes 2% yearly inflation on natural gas costs

\*\*Incentives, per New Jersey Clean Energy Program, are \$1.00 per MBH

The original building window are single pane with solid aluminum frames. These windows have minimal insulation value. A typical metal frame single pane window have a u value of 1.0.

New windows have many improvements. A premium efficiency window has double or triple pane glass. The glass insulation is further improved by using argon or krypton gas between the panes. Window frames have thermal breaks and they are insulated. The window panes have better weather stripping.

This measure is based upon installing new windows with a u value of 0.35 or less. This window will also have a low e coating. Table 4.2-20 demonstrates the potential payback from such an implementation.

| <b>Table 4.2-20</b>                            |            |
|------------------------------------------------|------------|
| <b>Wall High School Window Upgrade Payback</b> |            |
| Predicted Annual Savings (Therms)              | 3,000      |
| Predicted Annual Savings (kWh)                 | 13,000     |
| Total Annual Savings                           | \$ 5,506   |
| Initial Capital Cost of Upgrade                | \$ 150,100 |
| Incentives                                     | \$ 0       |
| Cost of Upgrade                                | \$ 150,100 |
| Annual Maintenance Cost Savings (AMCS)         | \$ 0       |
| Simple Payback                                 | 27.3       |
| Lifetime Energy Savings (20 years)*            | \$ 138,681 |
| Annual Return on Investment (AROI)             | -3.00%     |
| Internal Rate of Return (IRR)                  | -0.69%     |
| Net Present Value (NPV)                        | \$ -49,277 |

\* Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

The building heating, ventilation and cooling system is controlled by a DDC system. The building has occupied and unoccupied settings. Presently the occupied settings are controlled by schedules assigned to

the various spaces. Often the buildings are scheduled totally occupied until the late staff leave. This can have the building occupied for less than 10 people.

Installation of occupancy sensors to control the DDC occupied and unoccupied schedule to increase the number of hours the building is unoccupied. This will reduce the ventilation air, heating setpoints, and hours of cooling. The measure involves installing occupancy sensors in all classrooms and other major spaces and programming the DDC system to control based upon sensors.

| <b>Table 4.2-21</b>                                   |            |
|-------------------------------------------------------|------------|
| <b>Wall High School HVAC Occupancy Sensor Payback</b> |            |
| Predicted Annual Savings (Therms)                     | 12,200     |
| Predicted Annual Savings (kWh)                        | 142,000    |
| Total Annual Savings                                  | \$35,458   |
| Initial Capital Cost of Upgrade                       | \$ 180,000 |
| Incentives**                                          | \$ 0       |
| Cost of Upgrade                                       | \$ 180,000 |
| Simple Payback                                        | 5.1        |
| Lifetime Energy Savings (15 years)*                   | \$ 915,088 |
| Annual Return on Investment (AROI)                    | 19.03%     |
| Internal Rate of Return (IRR)                         | 27.98%     |
| Net Present Value (NPV)                               | \$ 525,743 |

\*Assumes 2% yearly inflation on natural gas costs, 3% inflation on electricity costs

\*\*Per New Jersey Clean Energy Program, this measure is not incentivised

## 4.3 Alternative Energy Sources

### 4.3.1 Photovoltaic Solar Energy System Overview

Photovoltaic (PV) cells convert energy from sunlight directly into electrical energy through the use of silicon semi conductors, diodes and collection grids. Several PV cells are then linked together in a single frame of module to become a solar panel. PV cells are able to convert the energy from the sun into electricity. The angle of inclination of the PV cells, the amount of sunlight available, the orientation of the panels, the amount of physical space available and the efficiency of the individual panels are all factors that affect the amount of electricity that is generated.

Based on the estimated cumulative total available roof area, calculations determine that the installation of five systems with a total rating of approximately 3.1 MW will be appropriate for the five buildings listed below.

As part of this energy audit, a preliminary engineering feasibility study of the existing building sites to support solar generation facilities was completed consisting of the following tasks:

- Site visit by CDM Smith engineers
- Satellite Image Analysis and Conceptual design and layout of the photovoltaic system
- Design and construction cost estimates
- Determine a preliminary design for the size and energy production of the solar system

The total unobstructed available area of each section of roof having a southern exposure for the existing buildings were evaluated. It is important to note that the structural integrity of the roofs was not confirmed during CDM Smith's site visit, therefore, buildings may require some degree of roof reinforcing work prior to the implementation of a roof mounted solar system.

In the case of the flat areas, the PV system sizing and kWh production was calculated assuming the installation of a crystalline module facing south direction (180 Degree Azimuth) and tilted approximately 20 degrees to allow better rain water shedding and snow melting. Please note that the kWh production as well as system size may differ significantly based on final panel tilt selected during the RFP and design phase.

Blended electric rates were used based on actual utility bills and were applied for the facility.



**Fixed Tilt System**

The following is a preliminary study on the feasibility of installing PV solar systems at five (5) buildings to generate a portion of each facility's electricity requirements. Each system is designed to offset the electric purchased from the local utility and not as a backup or emergency source of power.

In order to determine the best location for the installation of the PV solar system, a satellite image analysis and site walkthrough of the buildings was performed during the week of July 12-13, 2012.

Also, as part of the assessment, CDM Smith investigated possible locations for electrical equipment that need to be installed such as combiner boxes, disconnect switches and DC to AC inverters. Consideration was also given to locations of interconnection between the solar system and building's electrical grid.

Table 4.3-1 provides a summary of all proposed roof mounted PV systems for the Board. The Project Team conducted facility walkthroughs and utilized satellite image analysis and to determine the estimated total available area, then calculated the potential capacity of a solar array system for each location. It should be noted that the interconnection point for the PV system will require a modification or replacement of the existing service entrance equipment wherein the PV system feeder connections will have to be made after the main circuit breaker, and protective relaying will also have to be implemented. Any connection points would have to meet NEC and local utility requirements. Further investigation and verification of existing electrical equipment at each location would be required prior to implementation of a PV system. See section 2 for a detailed description of each building's roof type.

| Table 4.3-1<br>Proposed Solar System Summary |             |                                |
|----------------------------------------------|-------------|--------------------------------|
| Location                                     | Roof Type   | Proposed PV Array Size (kW DC) |
| Old Mill Elementary School                   | Flat        | 215.5                          |
| Wall High School                             | Flat        | 113.5                          |
| Central Elementary School                    | Flat/Sloped | 1614.6                         |
| Allenwood Elementary School                  | Flat        | 322.9                          |
| Wall Intermediate School                     | Flat        | 861.1                          |

#### 4.3.1.1 Basis for Design and Calculations

The proposed Photovoltaic (PV) Power systems outlined in Table 4.3-1 for each facility are comprised of the PV arrays, inverter(s), combiner boxes, disconnect switches, and all of the necessary wiring and interconnection equipment. The solar panels will be mounted onto the roof. The array outputs will feed power into the DC to AC inverters. AC outputs will then be connected at each building's electrical service as outlined above. Pending further engineering analysis of the roofs, it is yet to be determined if the solar arrays will be installed using a self-ballasting system, or roof penetration system, or a combination of both.

The most common roof mounted system is referred to as a ("fixed tilt") system typically mounted to a metal rack that can be fixed at a specific angle. There are also ("tracking systems") or movable along one or two axes to follow the position of the sun during the day. For a roof-mounted PV system, tracking systems are very rarely installed and are usually used for ground-mounted systems only, as they require more complex racks and higher maintenance costs. For the "fixed" system, the tilt is determined based on the following factors: geographical location, total targeted kWh production, seasonal electricity requirements and weather conditions such as wind. Ideally, the module tilt for Central NJ should be 25-35 degrees with an azimuth as close as possible to 180 (south); however, experience has shown that PV systems are typically installed at a tilt of 20degrees or lower in order to avoid any issues with wind and to maximize total system size.

The type of PV panels and equipment used to mount the system shall be determined based on the wind conditions and structural integrity of the roof determined during the design phase of the project. In general, penetration/tie-down systems, non-penetrating ballasted type systems, or a combination of the two should be considered.

#### Calculation of PV System Yield

An industry accepted software package PV Watts was used to calculate projected annual electrical production of the crystalline silicon PV system in its first year. Results of this calculation are summarized in Table 4.3-2. The PV systems were designed to provide maximum kWh production based on available roof space.



**Table 4.3-2**  
**Summary of Solar (PV) Systems**

| Building                    | Square Footage Available (ft <sup>2</sup> ) | Size (kW DC) | First Year Solar kWh Production | First Year Energy Savings | SRECs     | ARO I | IRR    | NPV           | Lifetime Savings (25 Years) |
|-----------------------------|---------------------------------------------|--------------|---------------------------------|---------------------------|-----------|-------|--------|---------------|-----------------------------|
| Allenwood Elementary School | 21,549                                      | 216          | 251,481                         | \$37,722                  | \$75,444  | 0.2%  | (1%)   | (\$897,557)   | \$1,375,320                 |
| Central Elementary School   | 11,345                                      | 114          | 132,398                         | \$19,860                  | \$39,719  | 0.1%  | (1.4%) | (\$531,731)   | \$724,070                   |
| Wall High School            | 161,459                                     | 1615         | 1,884,221                       | \$282,633                 | \$565,266 | 0.4%  | (0.7%) | (\$5,913,388) | \$10,304,595                |
| Old Mill Elementary School  | 32,292                                      | 323          | 376,844                         | \$56,527                  | \$113,053 | 0.3%  | (0.9%) | (\$1,282,678) | \$2,060,919                 |
| Wall Intermediate School    | 86,111                                      | 861          | 1,004,918                       | \$140,689                 | \$301,475 | 0.3%  | (1.1%) | (\$3,441,964) | \$5,129,398                 |

For facilities not in close proximity to Board school properties, CDM Smith has found installing solar panels on such properties, and transmitting the electricity generated a far distance to a nearby Board owned property would increase the capital cost to install the solar system beyond the point of the Board ever receiving a payback from the system, and therefore CDM Smith does not recommend the installation of remotely mounted solar systems.

### 4.3.2 Geothermal Energy

Geothermal systems utilize the constant temperature of the earth throughout the year (at depths from 5 ft. to 1,000 ft. the earth temperature remains at 53 deg. F) as the primary source of energy for the heating/cooling and domestic hot water production. Additionally, since the earth is maintained at a constant temperature from heat absorbed from the sun this energy is considered a “renewable resource,” and therefore is not as reliant on existing supplies of fossil fuels

Even though this application requires significantly higher up-front costs, it has several advantages over conventional HVAC systems such as substantially lower operating and maintenance costs. The life span of the system is longer than conventional heating and cooling systems. Most loop fields are warranted for 25 to 50 years and are expected to last at least 50 to 100 years. However, it is important to note that geothermal systems are more difficult to install in existing facilities and require higher capital cost due to having to complete significant infrastructure changes. Soil conditions in the area surrounding the facilities must be conducive to conducting heat to provide adequate performance.

For existing buildings and facilities, CDM Smith has found that geothermal energy systems do not provide enough energy savings to offset the significant initial capital costs. Additionally, minimal incentives and grants are available to help offset the costs associated with implementations of these types of systems. CDM Smith therefore does not recommend implementation of a geothermal energy system.

### 4.3.3 On-Site Wind Power Generation

On-site wind power generation typically utilizes a form of turbine, which is rotated with the flow of wind across it, this rotational force powers a generator, producing DC electricity. The DC electricity is then converted into AC electricity, which can be used for commercial power, or can be fed back into the power grid, reducing the overall electric demand. The size of the turbine is proportional to the amount of wind and concurrently the amount of energy it can produce.

CDM Smith has determined that it may not be economically feasible for the Board to install wind turbine energy systems at its facilities. This is primarily due to a payback of greater than 20 years for electrical energy produced at average wind speeds. There are many other incentives that could possibly provide additional funding which would reduce the payback period further.

Utilizing NASA's Atmospheric Science Data Center online wind mapping tool, it was determined that the local average wind speeds for the Board ranged from 4.44 m/s to 6.4 m/s at 42.7 meters above the ground. In general, around 7mph of average wind speed, as determined over the course of a year, is necessary to "fuel" the turbine. These values fall within the range of feasibility for installation of a new wind turbine system.



For the purposes of this feasibility analysis, CDM Smith chose a 35kW Endurance G-3120 wind turbine. Please refer to Appendix L for vendor information. This turbine size is used most often for small commercial applications. Power Curve data was determined through the use of the product specification sheets on vendor websites. Actual turbine size, height, location, and manufacturer should be determined upon design of a wind turbine system.

The estimated wind speed data, associated wind probability distribution function (weibull value), turbulence losses, and other relevant data were then incorporated into Wind Cad to estimate the annual output for the wind turbine. Refer to Appendix I for Wind Cad Modeling.

Table 4.3-3 includes a simple payback analysis for the installation of one wind turbine energy system. Refer to Appendix J for a more detailed wind turbine financing spreadsheet, including utility cost avoidance and REC's.

| <b>Parameter</b>                    | <b>Wind Turbine<br/>(Minimum Site<br/>Wind Speed – 4.4<br/>m/s)</b> | <b>Wind Turbine<br/>(Maximum Site Wind<br/>Speed – 6.4 m/s)</b> | <b>Wind Turbine<br/>(Average Site Wind<br/>Speed – 5.5 m/s)</b> |
|-------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Engineer's Opinion of Probable Cost | \$450,000                                                           | \$450,000                                                       | \$450,000                                                       |
| 1 <sup>st</sup> Year Production     | 77,954.0                                                            | 158,179.0                                                       | 124,628.0                                                       |
| Annual Estimated Electric Savings   | \$11,693                                                            | \$23,727                                                        | \$18,694                                                        |
| Annual Estimated REC Revenue        | \$1,949                                                             | \$3,954                                                         | \$3,116                                                         |
| Project Simple Payback              | <b>33.0</b>                                                         | <b>16.3</b>                                                     | <b>20.6</b>                                                     |
| Annual Return On Investment (AROI)  | (1.0%)                                                              | 2.2%                                                            | 0.9%                                                            |
| Lifetime Energy Savings (25 years)  | \$426,321.82                                                        | \$865,063.50                                                    | \$681,576.78                                                    |



| Table 4.3-3<br>Simple Payback Analysis for Wind Turbine Energy System |                                                           |                                                        |                                                       |
|-----------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|
| Parameter                                                             | Wind Turbine<br>(Minimum Site<br>Wind Speed – 4.4<br>m/s) | Wind Turbine<br>(Maximum Site Wind<br>Speed – 6.4 m/s) | Wind Turbine<br>(Average Site Wind<br>Speed –5.5 m/s) |
| Internal Rate of Return (IRR)                                         | (0.1%)                                                    | 5.6%                                                   | 3.5%                                                  |
| Net Present Value (NPV)                                               | (\$150,361)                                               | \$158,008                                              | \$29,045                                              |

\*Refer to Appendix J for Wind Cad Modeling

It should be noted that CDM Smith used only REC values in determining simple payback periods. As stated above, other incentives and financial programs such as Power Purchase Agreements are available to help finance this installation. For example, if a Power Purchase Agreement is completed, the private company financing the project would benefit from the 30% tax credit. Other incentives such as CREB's and first year usage incentives could be available to the Board in lowering the payback period. Refer to [www.dsireusa.org](http://www.dsireusa.org) for an extensive listing of possible incentives for New Jersey.

It should also be noted that the wind turbine represented above is for feasibility purposes only. If the Board decides to install a wind turbine system(s), different mounting heights, turbine sizes, and manufacturers should be considered. In addition, permits may be required for installation according to local zoning laws. The FAA must also be notified in order to give clearance for the tower, and for installation of aviation safety lights if necessary.

For facilities not in close proximity to Board school properties, CDM Smith has found installing wind turbines on such properties, and transmitting the electricity generated a far distance to a nearby Board owned property would increase the capital cost to install the wind turbine system beyond the point of the Board ever receiving a payback from the system, and therefore CDM Smith does not recommend the installation of remotely mounted wind turbines.

#### 4.3.4 Additional Measures

It may be possible to reduce the plug load of the facilities even further with the implementation of smart strips and energy star appliances. Smart Strips save energy by electronically unplugging all of the devices that are plugged into the “Automatically Switched outlets” when the device plugged into the control outlet is turned off. It is important to note that CDM Smith is not suggesting that computers be plugged into the automatically switched off outlets, as there would be potential for the computers to be shut off mid-operation. There are a vast amount of computer peripherals that are typically left on after a computer is shut off, including monitors, scanners, printers and DSL/Cable modems. These peripherals can be plugged into the automatic outlets.

A standard Smart Strip has one ‘control’ outlet, six (6) outlets that are automatically switched off when the control device is and three (3) outlets that are always hot. An example of how the Board can implement the use of Smart Strips in an office is to plug a computer into the control outlet, five (5) monitors and a personal printer (8 W in standby mode) into the automatic outlets and three (3) computers into the always hot outlets. An LCD monitor can use up to 34W; in standby mode the monitor utilizes 1 – 2W. A CRT monitor typically utilizes around 75W. The following table 4.3-4 summarizes the payback of a Smart Strip, assuming 5 LCD monitors and 1 printer are automatically powered down that would otherwise been left on 8 hours/day and in standby mode 16 hours/day, 5 days/week for 9 months.

| <b>Table 4.3-4: Simple Payback<br/>Smart Strip Application Example</b> |        |
|------------------------------------------------------------------------|--------|
| Predicted Annual Savings – 5 LCD monitors, 1 printer (kWh)             | 308    |
| *Total Annual Savings                                                  | \$46.2 |
| Initial Capital Cost                                                   | \$40   |
| Simple Payback (years)                                                 | 0.87   |
| Lifetime Energy Savings (15 years)                                     | \$693  |

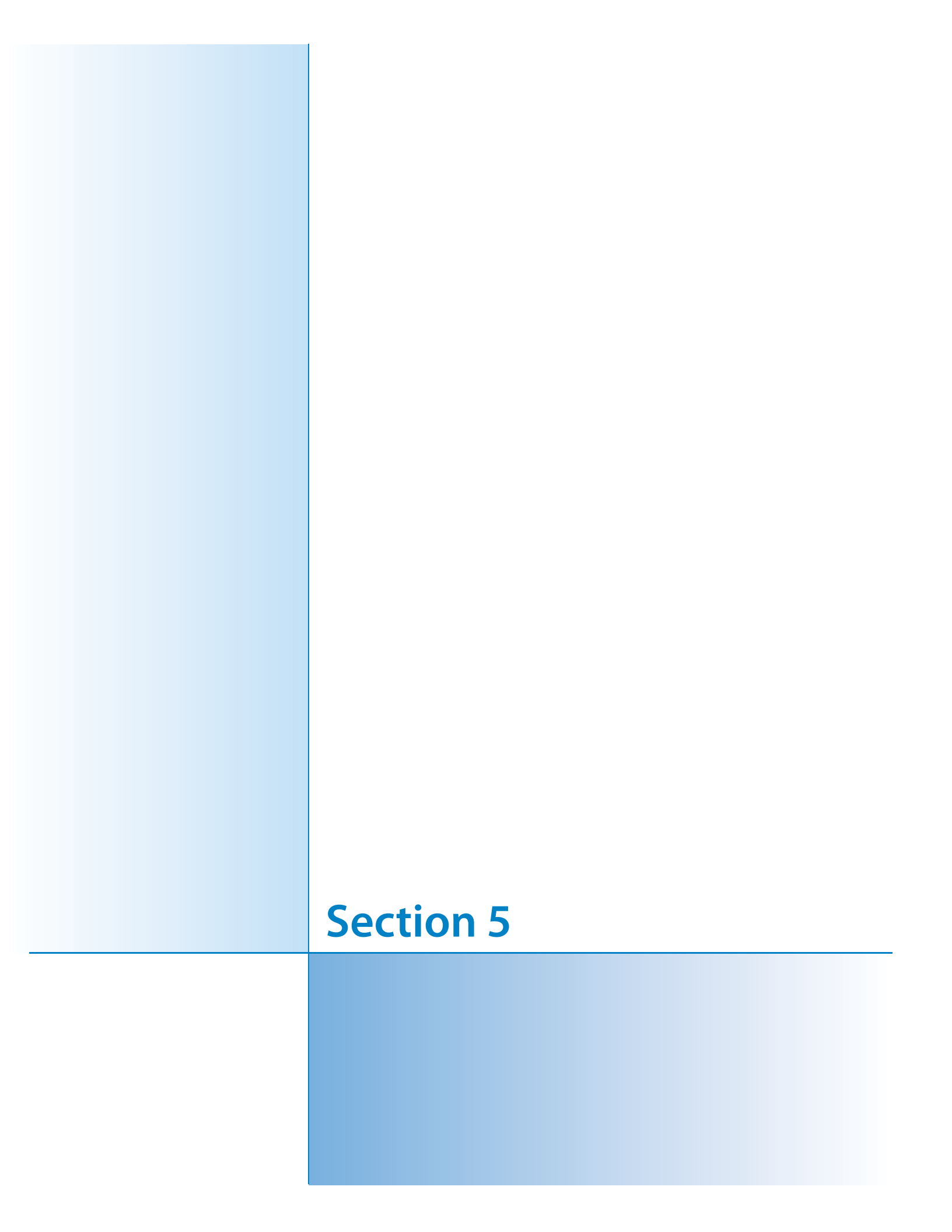
\*Aggregate Cost of \$0.15

The following Table 4.3-5 summarizes other applications for the Smart Strip that may be applicable throughout the buildings:

| <b>Table 4.3-5 Applications for Smart Strips</b> |                                     |
|--------------------------------------------------|-------------------------------------|
| <b>Control Outlet</b>                            | <b>Switched Outlets</b>             |
| Computer                                         | Monitors, printers, scanners, lamps |
| TV                                               | VCR, DVD player, cable box          |
| Lamp                                             | Stereo, space heater                |

The Board should continue to implement Energy Star appliances. This is recommended on an ‘as-needed’ basis.

In addition to replacing old appliances with Energy Star appliances, the following two maintenance procedures can work to save the energy consumed by the refrigerators. One is cleaning dirty condenser coils, twice a year. A refrigerator’s condenser coils and cooling fins are located either under the unit behind a grille in the front or on the back of the appliance. The coils can be cleaned with a brush or vacuum cleaner hose. The second source of wasted energy associated with a refrigerator is the door seal. Realigning the door or replacing a no longer airtight door seal will work to improve energy efficiency.

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## Section 5

## Section 5

# Evaluation of Energy Purchasing and Procurement Strategies

### 5.1 Energy Deregulation

In 1999, New Jersey State Legislature passed the Electric Discount & Energy Competition Act (EDECA) to restructure the electric power industry in New Jersey. This law, the deregulation of the market, allowed all consumers to shop for their electric supplier. The intent was to create a competitive market for electrical energy supply. As a result, utilities were allowed to charge Cost of Service and customers were given the ability to choose a third party supplier. Energy deregulation in New Jersey increased the energy buyers' options by separating the function of electricity distribution from that of electricity supply.

CDM Smith obtained a third party energy supplier quote for the Board, and unfortunately, the rates offered by the third party energy supplier were not competitive with the Jersey Central Power and Light (JCP&L) utility rates that the Board is currently paying. Therefore, CDM Smith does not recommend that the Board switch to a third party energy supplier at this time.

To sell electric generation service in New Jersey, electric power suppliers must be licensed by the New Jersey Board of Public Utilities (NJ BPU). They must also be registered with the local public utility (JCP&L) to sell electric service in that utility's service areas. The following suppliers are licensed with the NJ BPU and are registered to sell electric service in the JCP&L service territory:

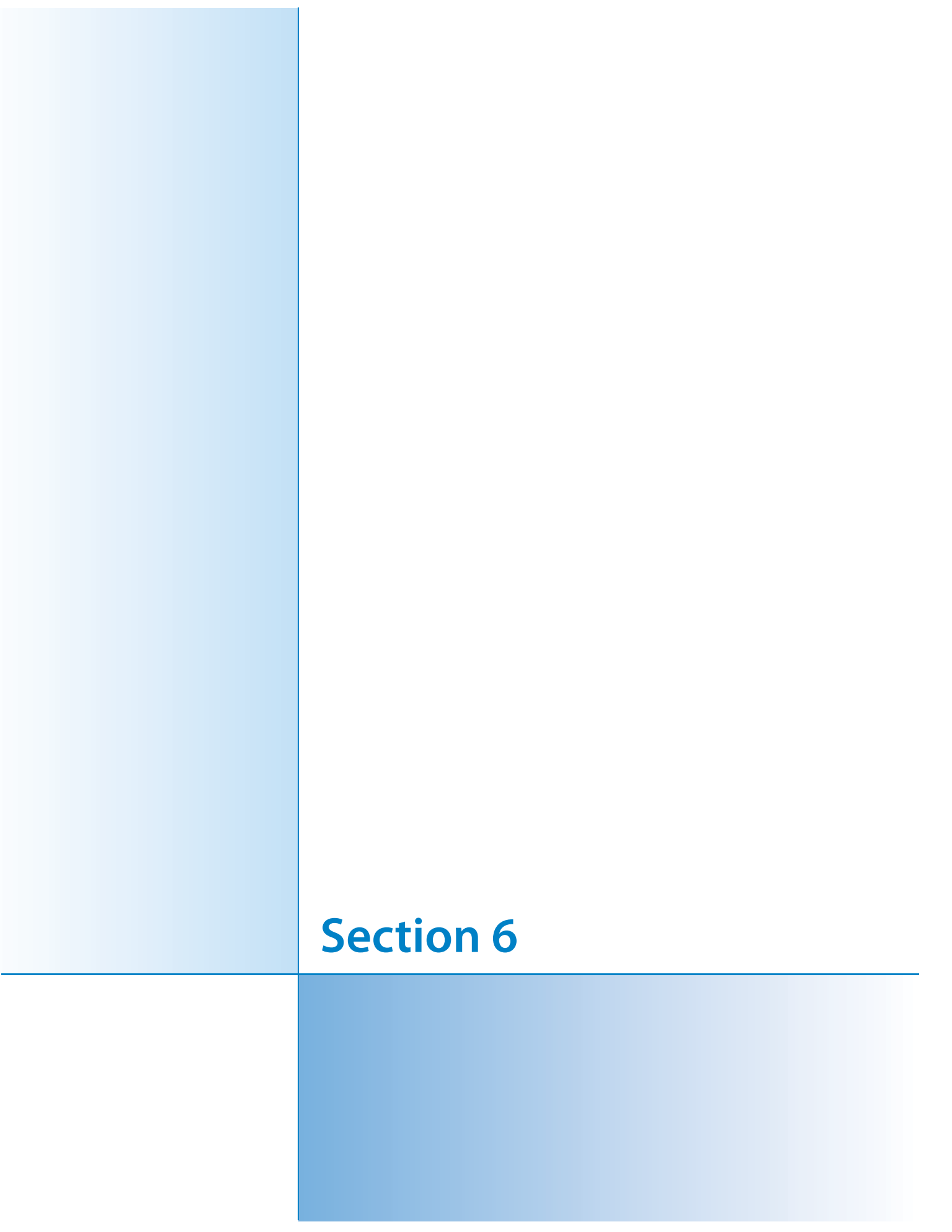
- Amerada Hess Corp
- BOC Energy Services
- Con Edison Solutions, Inc.
- Constellation New Energy, Inc.
- Direct Energy, LLC.
- First Energy Solutions Corp.
- Glacial Energy
- Integrys Energy Service
- Liberty Power
- Pepco Energy Services, Inc.
- PP&L Energy Plus, LLC.
- Reliant Energy Solutions East, LLC.
- Sempra Energy Solutions
- South Jersey Energy
- Strategic Energy LLC
- Suez Energy Resources NA, Inc.
- UGI Energy Services

## 5.2 Demand Response Program

Demand Response is a program through which a business can make money on reducing their electricity use when wholesale electricity prices are high or when heavy demand causes instability on the electric grid, which can result in voltage fluctuations or grid failure. Demand Response is an energy management program that compensates the participant for reducing their energy consumption at critical times. Demand Response is a highly efficient and cost effective means of reducing the potential for electrical grid failure and price volatility and is one of the best solutions to the Mid-Atlantic region's current energy challenges.

The program provides at least two hours advance notice before curtailment is required. There is typically one event a year that lasts about three hours in the summer months, when demand for electricity is at its highest.

Participation in Demand Response is generally done through companies known as Curtailment Service Providers, or CSPs, who are members of PJM Interconnection. There is no cost to enroll in the program and participation is voluntary, for instance, you can choose when you want to participate. In most cases, there is no penalty for declining to reduce your electricity use when you are asked to do so. The event is managed remotely by notifying your staff of the curtailment request and then enacting curtailment through your Building Management System. CSPs will share in a percentage of your savings, which may differ among various CSPs, since there may be costs associated with the hardware and/or software required for participation, so it is recommended that a number of CSPs be contacted to review their offers.

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## Section 6

## Section 6

# Ranking of Energy Conservation and Retrofit Measures (ECRMs)

### 6.1 ECRMs

The main objective of this energy audit is to identify potential Energy Conservation and Retrofit Measures and to determine whether or not the identified ECRM's are economically feasible to warrant the cost for planning and implementation of each measure. Economic feasibility of each identified measure was evaluated through a simple payback analysis. The simple payback analysis consists of establishing the Engineer's Opinion of Probable Construction Cost estimates; O&M cost savings estimates, projected annual energy savings estimates and the potential value of New Jersey Clean Energy Rebates or Renewable Energy Credits, if applicable. The simple payback period is then determined as the amount of time (years) until the energy savings associated with each measure amounts to the capital investment cost.

As discussed in Section 3, aggregate unit costs for electrical energy delivery and usage and natural gas delivery and usage, which accounts for all demand and tariff charges at each complex, was determined and utilized in the simple payback analyses.

In general, ECRMs having a payback period of 20 years or less have been recommended and only those recommended ECRMs within Section 4 of the report have been ranked for possible implementation. The most attractive rankings are those with the lowest simple payback period.

Ranking of ECRMs has been broken down into the following categories:

- Lighting Systems
- HVAC Systems
- Solar Systems
- Wind Systems

#### 6.1.1 Lighting Systems

Table 6.1-1 includes the recommended ECRMs to provide energy savings for all building lighting systems, which include the installation of energy-efficient luminaires and occupancy sensors. A detailed discussion on building lighting systems is presented in Section 4.1.

| Table 6.1-1<br>Ranking of Energy Savings Measures Summary – Lighting System Retrofits |               |            |            |                       |                        |
|---------------------------------------------------------------------------------------|---------------|------------|------------|-----------------------|------------------------|
| Building                                                                              | Retrofit Cost | Incentives | Total Cost | Annual Fiscal Savings | Simple Payback (Years) |
| Old Mill Elementary School - Total                                                    | \$28,961.3    | \$3,980.0  | \$24,981.3 | \$12,018.3            | 2.1                    |
| Wall High School - Total                                                              | \$79,404.6    | \$14,010.0 | \$65,394.6 | \$29,293.7            | 2.2                    |
| Central Elementary School - Total                                                     | \$23,323.1    | \$3,775.0  | \$19,548.1 | \$8,050.4             | 2.4                    |
| Allenwood Elementary School - Total                                                   | \$35,147.2    | \$4,610.0  | \$30,537.2 | \$9,054.1             | 3.4                    |
| Wall Intermediate School - Total                                                      | \$82,257.7    | \$13,205.0 | \$69,052.7 | \$20,444.0            | 3.4                    |

### 6.1.2 HVAC Systems

Table 6.1-2 includes the recommended ECRM to provide energy savings for building HVAC systems, which provide a simple payback of less than 25 years. A detailed discussion on building HVAC systems is presented in Section 4.2.

| Table 6.1-2<br>Ranking of Energy Savings Measures Summary – HVAC System Upgrade |               |            |            |                       |                        |
|---------------------------------------------------------------------------------|---------------|------------|------------|-----------------------|------------------------|
| Building Measure                                                                | Retrofit Cost | Incentives | Total Cost | Annual Fiscal Savings | Simple Payback (Years) |
| Old Mill<br>HVAC Occ Sensor                                                     | \$88,000      | \$0        | \$88,000   | \$32,074              | 2.7                    |
| High School<br>HVAC Occ Sensor                                                  | \$180,000     | \$0        | \$7,300    | \$35,458              | 5.1                    |
| Allenwood<br>HVAC Occ Sensor                                                    | \$80,000      | \$0        | \$138,000  | \$14,538              | 5.5                    |
| Old Mill<br>Hot Water VFD Control                                               | \$7,300       | \$775      | \$7,300    | \$1,181               | 6.2                    |
| Intermediate<br>Boiler Upgrade                                                  | \$187,500     | \$4,000    | \$80,000   | \$23,520              | 7.8                    |
| Old Mill<br>Boiler Upgrade                                                      | \$187,500     | \$4,000    | \$187,500  | \$23,044              | 8.0                    |
| Intermediate<br>Wall Insulation                                                 | \$252,000     | \$0        | \$187,500  | \$25,814              | 9.8                    |
| Intermediate<br>Hot Water VFD Control                                           | \$7,300       | \$775      | \$138,000  | \$678                 | 10.8                   |
| Intermediate<br>HVAC Occ Sensor                                                 | \$138,000     | \$0        | \$7,300    | \$7,645               | 18.1                   |



| Table 6.1-2<br>Ranking of Energy Savings Measures Summary – HVAC System Upgrade |               |            |            |                       |                        |
|---------------------------------------------------------------------------------|---------------|------------|------------|-----------------------|------------------------|
| Building Measure                                                                | Retrofit Cost | Incentives | Total Cost | Annual Fiscal Savings | Simple Payback (Years) |
| Old Mill<br><b>Window Upgrade</b>                                               | \$99,809      | \$0        | \$80,000   | \$5,162               | 19.3                   |
| Allenwood<br><b>Wall Insulation</b>                                             | \$157,648     | \$0        | \$187,500  | \$7,686               | 20.5                   |
| High School<br><b>Boiler Upgrade</b>                                            | \$210,000     | \$4,000    | \$187,500  | \$9,480               | 21.0                   |

### 6.1.3 Solar Energy

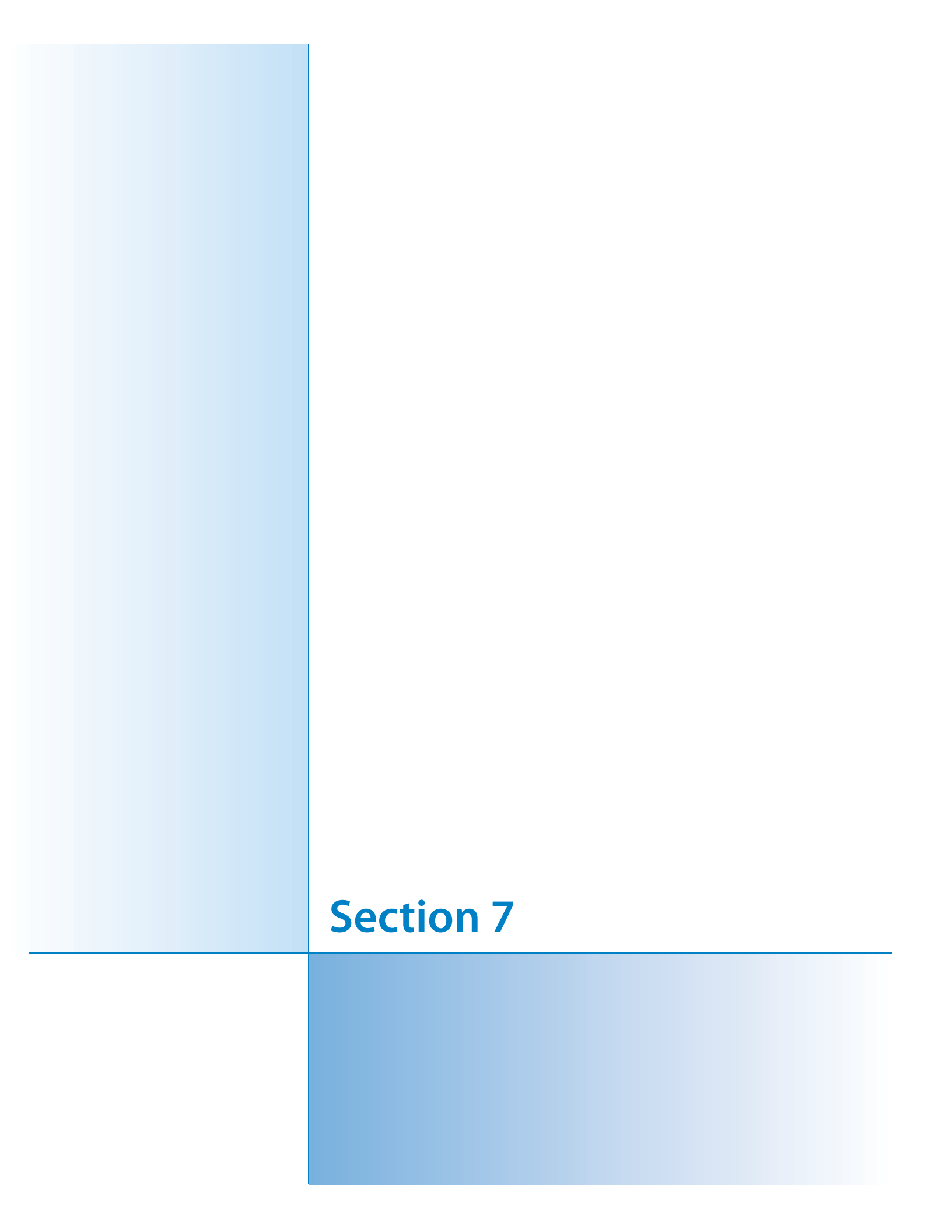
Implementation of new solar energy systems has been evaluated to determine the economic feasibility for furnishing and installing such systems. Based on the simple payback modeling performed, it would not benefit the Board to further investigate installing the solar energy systems. This is primarily based on the initial upfront capital investment required for a solar energy system installation and payback period greater than 20 years. Table 6.1-3, includes a ranking of the solar energy ECRMs evaluated for the Board.

| Table 6.1-3<br>Ranking of Energy Savings Measures Summary – Solar Energy Systems |                |                    |                       |                        |
|----------------------------------------------------------------------------------|----------------|--------------------|-----------------------|------------------------|
| Building                                                                         | Retrofit Cost  | Annual SREC Credit | Annual Fiscal Savings | Simple Payback (Years) |
| Wall High School                                                                 | \$18,289,081.3 | \$565,266.2        | \$282,633.1           | 22.6                   |
| Old Mill Elementary School                                                       | \$3,757,816.3  | \$113,053.2        | \$56,526.6            | 23.2                   |
| Wall Intermediate School                                                         | \$9,812,510.0  | \$301,475.3        | \$140,688.5           | 23.2                   |
| Allenwood Elementary School                                                      | \$2,549,299.4  | \$75,444.2         | \$37,722.1            | 23.6                   |
| Central Elementary School                                                        | \$1,401,329.4  | \$39,719.4         | \$19,859.7            | 24.6                   |

### 6.1.4 Wind Energy

Implementation of new wind energy systems has been evaluated to determine the economic feasibility for furnishing and installing such systems. Based on the simple payback modeling performed, it would not benefit the Board to further investigate installing the wind energy systems. This is primarily based on the initial upfront capital investment required for a wind energy system installation and a payback period greater than 20 years. Table 6.1-4, includes a ranking of the wind energy ECRMs evaluated for the Board.

| <b>Table 6.1-4</b><br><b>Ranking of Energy Savings Measures Summary – Wind Turbine Energy System</b> |                                                                     |                                                                     |                                                                |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------|
| <b>Parameter</b>                                                                                     | <b>Wind Turbine<br/>(Minimum Site<br/>Wind Speed –<br/>4.4 m/s)</b> | <b>Wind Turbine<br/>(Maximum Site<br/>Wind Speed –<br/>6.4 m/s)</b> | <b>Wind Turbine (Average<br/>Site Wind Speed –5.5<br/>m/s)</b> |
| Engineer's Opinion of Probable Cost                                                                  | \$450,000                                                           | \$450,000                                                           | \$450,000                                                      |
| 1 <sup>st</sup> Year Production (kWh)                                                                | 77,954.0                                                            | 158,179.0                                                           | 124,628.0                                                      |
| Annual Estimated Electric Savings                                                                    | \$11,693                                                            | \$23,727                                                            | \$18,694                                                       |
| Annual Estimated REC Revenue                                                                         | \$1,949                                                             | \$3,954                                                             | \$3,116                                                        |
| Project Simple Payback                                                                               | <b>33.0</b>                                                         | <b>16.3</b>                                                         | <b>20.6</b>                                                    |

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## Section 7

## Section 7

# Grants, Incentives and Funding Sources

### 7.1 Renewable Energy

#### 7.1.1 Renewable Energy Certificates (NJ BPU)

As part of New Jersey's Renewable Portfolio Standards (RPS), electric suppliers are required to have an annually-increasing percentage of their retail sales generated by renewable energy. Electric suppliers fulfill this obligation by purchasing renewable energy certificates (RECs) from the owners of solar generating systems. One REC is created for every 1,000 kWh (1 MWh) of renewable electricity generated. Although solar systems generate electricity and SRECs in tandem, the two are independent commodities and sold separately. The RPS, and creation of RECs, is intended to provide additional revenue flow and financial support for renewable energy projects in New Jersey. Class I RECs, which include electricity generation from wind, wave, tidal, geothermal and sustainable biomass typically trade at around \$25/MWh. RECs generated from solar electricity, or SRECs, trade at \$550/MWh due to supplemental funding from NJ BPU. The supplemental funding will decrease over time to \$350/MWh.

#### 7.1.2 Clean Energy Solutions Capital Investment Loan/Grant (NJ EDA)

NJ EDA in cooperation with NJ DEP is offering interest-free loans and grants for energy efficiency, combined heat and power (CHP) and renewable energy projects with total project capital equipment costs of at least \$1 million. The interest-free loans are available for up to \$5 million, a portion of which may be issued as a grant. For additional information, contact [CESCI@njeda.com](mailto:CESCI@njeda.com) or call 866-534-7789.

#### 7.1.3 Renewable Energy Incentive Program (NJ BPU)

The Renewable Energy Incentive Program (REIP) is currently on hold. For more information on REIP, please see [www.njcleanenergy.com](http://www.njcleanenergy.com).

#### 7.1.4 Grid Connected Renewables Program (NJ BPU)

The New Jersey Grid Connected Renewables Program offers competitive incentives for wind and sustainable biomass electricity generation projects larger than 1 Megawatt (MW). Most of the incentives offered under this program will take the form of a payment for energy production (\$/MWh) once the project is operating. Incentives range up to \$58.49/MWh for publicly-owned wastewater biogas projects. Up to 10% of the incentive may be requested in the form of a lump grant to cover up-front costs such as financing fees, interconnection fees, project design, permitting, and construction costs. For more information on the Grid Connected Renewable Program, please see [www.njcleanenergy.com](http://www.njcleanenergy.com).

### 7.1.5 Utility Financing Programs

All four Electric Distribution Companies (EDCs) in New Jersey have developed long term contracting or financing programs for the development of solar energy systems. In all of the programs, Solar Renewable Energy Credits (SRECs) generated by the solar energy systems will be sold at auction to energy suppliers who are required to purchase a certain quantity of SRECs to meet their Renewable Portfolio Standard requirements.

### 7.1.6 Renewable Energy Manufacturing Incentive (NJ BPU)

New Jersey's Renewable Energy Manufacturing Incentive (REMI) program provides rebates to purchase and install solar panels, inverters, and racking systems manufactured in New Jersey. Rebates for panels start at \$0.25 per watt and rebates for tracking systems and inverters start at \$0.15 per watt for solar projects up to 500 kW in capacity. To be eligible for REMI, applicants must apply to either the Renewable Energy Incentive Program (REIP) or the SREC Registration Program (SRP).

### 7.1.7 Clean Renewable Energy Bonds (IRS)

The IRS is currently not accepting application for CREBs. For more information, please refer to <http://www.irs.gov/pub/irs-drop/a-10-54.pdf>.

### 7.1.8 Qualified Energy Conservation Bonds (IRS)

These IRS 0% interest bonds are very similar to CREBs except they are allocated based on state and county population. New Jersey was allocated \$90 million as part of the ARRA stimulus fund. QECBs are typically distributed through municipal bond banks or state economic development agencies.

### 7.1.9 Global Climate Change Mitigation Incentive Fund (US EDA)

The Economic Development Agency (part of the U.S. Department of Commerce) administers the GCCMIF to public works projects that reduce greenhouse gas emissions and creates new jobs. In FY 2012, \$16.5 million was allocated to the fund, and additional funding is expected to be allocated in FY 2013. Applications are due on a rolling basis. The program does not have a maximum grant amount but does limit the grant to 50 percent of the project cost.

### 7.1.10 Private Tax-Exempt Financing

Similar to traditional municipal bond financing, there are many private financial service companies that offer a myriad of options for tax-exempt financing of municipal projects. The providers of these services suggest that this capital can be offered at competitive rates in an expedited timeframe and with fewer complications when compared to traditional municipal financing methods. Though these factors would need to be compared on a case-by-case basis, the one distinct advantage to private financing on the current project would likely be the flexibility to structure payments to meet budget needs with consideration given to the terms and conditions of existing loan and/or bond agreements. For example, this mechanism could be used to limit the initial debt payments when the current bond debt is the greatest and the operations savings of the project has yet to be fully realized. It should also be noted that, in many cases, the construction and long term financing can be rolled into a single private financing agreement. Also, in some instances, equipment manufacturers have the ability to offer competitive financing terms (e.g. Siemens Financial Services Corporation), though financing from these sources is generally contingent upon a substantial portion of the project cost (~20% to 30%) being for their respective equipment.

### 7.1.11 Performance Based Contracts (ESCOs)

A second financing alternative for a project of this nature would be to enter into a Performance Based Contract with an Energy Services Company (ESCO). The premise of this type of contract is that it requires no initial municipal capital contributions in order to implement the project - instead relying on future operations cost savings and/or energy production, to fund the annual payments. Prior to entering into an agreement for the funding of the project, an ESCO would perform an energy audit and/or conceptual studies to confirm future energy cost savings or energy production inherent with the projects implementation and operation. The contract would then be formulated based on some measurable parameter(s) (energy production, etc.) which would be verified by measurement throughout the contract duration. The savings in energy costs or energy production would then be used to pay back the capital investment of the project over the contract time period (typically on the order of 10-years or less). The ESCO would guarantee the agreed upon energy savings or energy production. If the project does not meet energy savings or production commitments, the ESCO pays the owner the equivalent difference.

With this funding alternative, the ownership and operation of the facility would be maintained by the original owner. A performance contract may also include ESCO operation and maintenance of the energy-related facilities if that were deemed appropriate. Significant ESCO's with experience in this area include Siemens Building Technologies, Chevron and Johnson Controls. CDM Smith has functioned in several roles on performance based contracts including being the owner's representative and, on different contracts, providing design-build services (as a subcontractor to the ESCO). CDM Smith can provide additional experience-based information upon request.

### 7.1.12 Power Purchase Agreements (SPCs)

A Power Purchase Agreement (PPA) also delivers a project with no initial capital contribution by the original owner. In this model, a Special Purpose Company (SPC) created by a developer, would own the energy production facilities. Within the framework of a PPA, a SPC will typically lease property from the owners for construction and operation of the new facilities. The funding and construction of the new facilities would be performed by the SPC who would then own and operate the facilities for the duration of the contract (typically 20 to 30 years). Throughout that period of time, the original owner would purchase power from the SPC at a pre-negotiated rate which would take into account the initial capital cost, operation and maintenance of the constructed facility, ancillary benefits of the project and investor returns on investment. For renewable energy, financial incentives may enable this financing approach to compete favorably with utility power tariffs. Incentives include state and local tax credits, renewable energy credits, and Federal energy production tax credits or energy investment tax credits. It is expected that a number of experienced companies and developers may be interested in a PPA for New Jersey municipal renewable energy projects.

## 7.2 Energy Efficiency

### 7.2.1 Introduction

New Jersey's Clean Energy Program (NJ CEP) promotes increased energy efficiency and the use of clean, renewable sources of energy including solar, wind, geothermal, and sustainable biomass. The results for New Jersey are a stronger economy, less pollution, lower costs, and reduced demand for electricity. NJCEP offers financial incentives, programs, and services for residential, commercial, and municipal customers.

NJCEP reduces the need to generate electricity and burn natural gas which eliminates the pollution that would have been caused by such electric generation or natural gas usage. The benefits of these programs continue for the life of the measures installed, which on average is about 15 years. Thus, the public receives

substantial environmental and public health benefits from programs that also lower energy bills and benefit the economy.

### 7.2.2 New Jersey Smart Start Buildings Program (NJ BPU)

The New Jersey Smart Start Buildings Program offers rebate incentives for several qualifying equipment such as high efficient premium motors and lighting, and lighting controls.

Incentive information and incentive calculation worksheets are provided for the various new equipment installation identified in this report and are included in Appendix F.

### 7.2.3 Pay for Performance Program (NJ BPU)

Another program offered through the New Jersey Smart Start Program, is the Pay for Performance Program. Commercial, industrial and institutional buildings are eligible for participation if not already receiving Energy Efficiency and Conservation Block Grants.

Incentives are available for buildings that are able to present an Energy Reduction Plans that reduce the building's current energy consumption by 15% or more, in addition to incentives for installing the recommended measures and incentives for presenting the energy savings in a post-construction benchmarking report. No more than 50% of the total energy savings may be derived from lighting retrofits. In addition, the total energy savings of 15% may not come from the implementation of one energy savings measure. The incentive structure is provided in Appendix F.

The recommended ECRM's presented in this report are expected to warrant participation in this program.

### 7.2.4 Direct Install (NJ BPU)

Owners of existing small to mid-size commercial and industrial facilities with a peak electric demand that did not exceed 150 kW in any of the preceding 12 months are eligible to participate in Direct Install. Buildings must be located in New Jersey and served by one of the state's public, regulated electric or natural gas utility companies.

This program will cover up to 70% of the retro-fitting costs associated with the use of new energy efficient equipment. Lighting, HVAC, refrigeration, motors, natural gas systems, and variable frequency drives are covered under the Direct Install program.

The buildings covered under this audit that are potentially eligible for participation in the Direct Install Program, based on the requirement to have not exceeded a peak demand of 150 kW in the preceding 12 months, the only facility in this Energy Audit, Allenwood Elementary, qualifies for this program. The Direct Install Program is designed to fast-track project implementation so energy savings can be realized sooner rather than later. The steps for participation are to contact the contractor assigned and trained to provide Direct Install services in your County and schedule an Energy Assessment with this contractor. The contractor will assist in completing the Program Application and Participation Agreement.

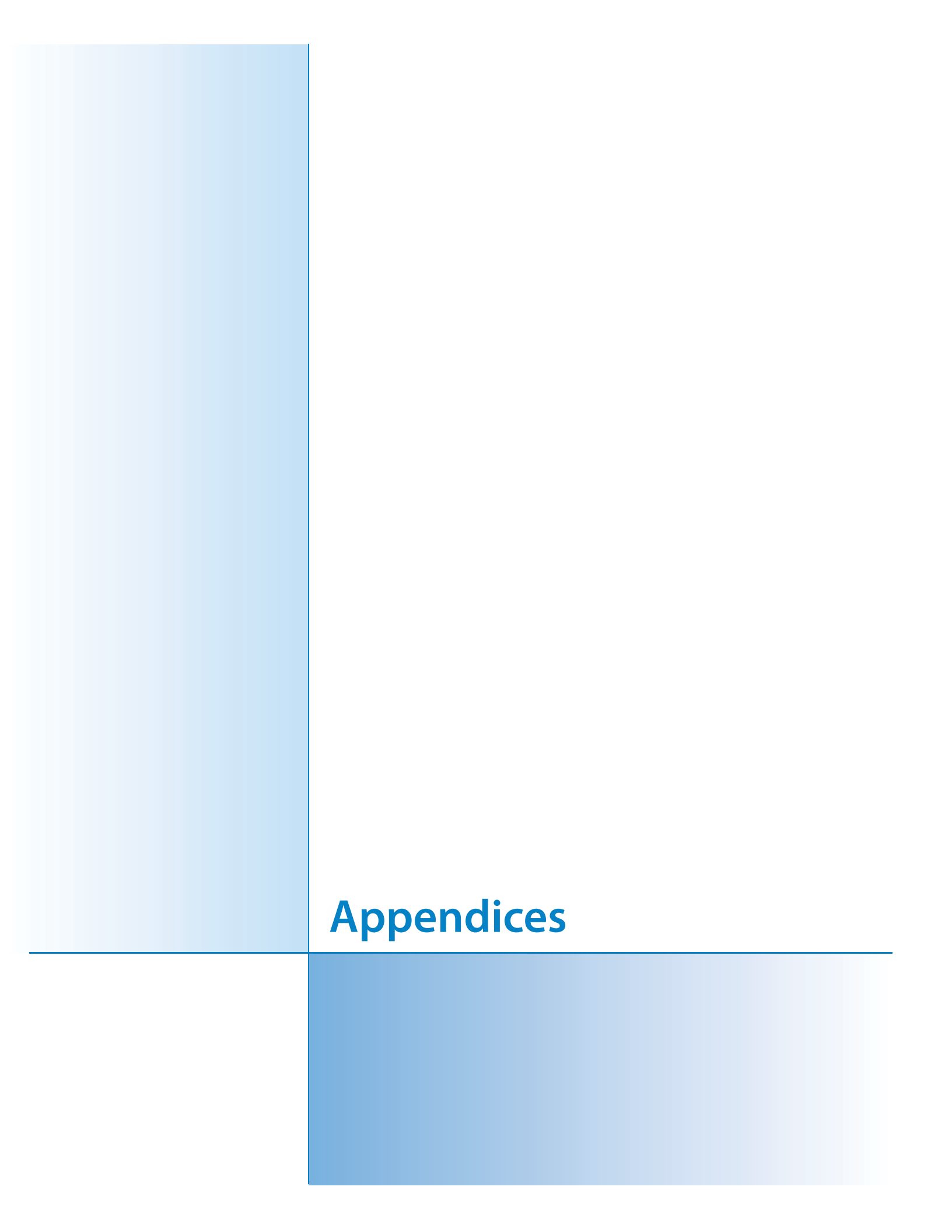
The Energy Assessment with the participating contractor will work to determine which conservation measures qualify and the resulting project cost. Following this assessment, a scope of work will be finalized and installation will be arranged. Following completion of the installation a 'project completion form' must be submitted to the program representative assigned to the project.

The contractor for Monmouth County is:

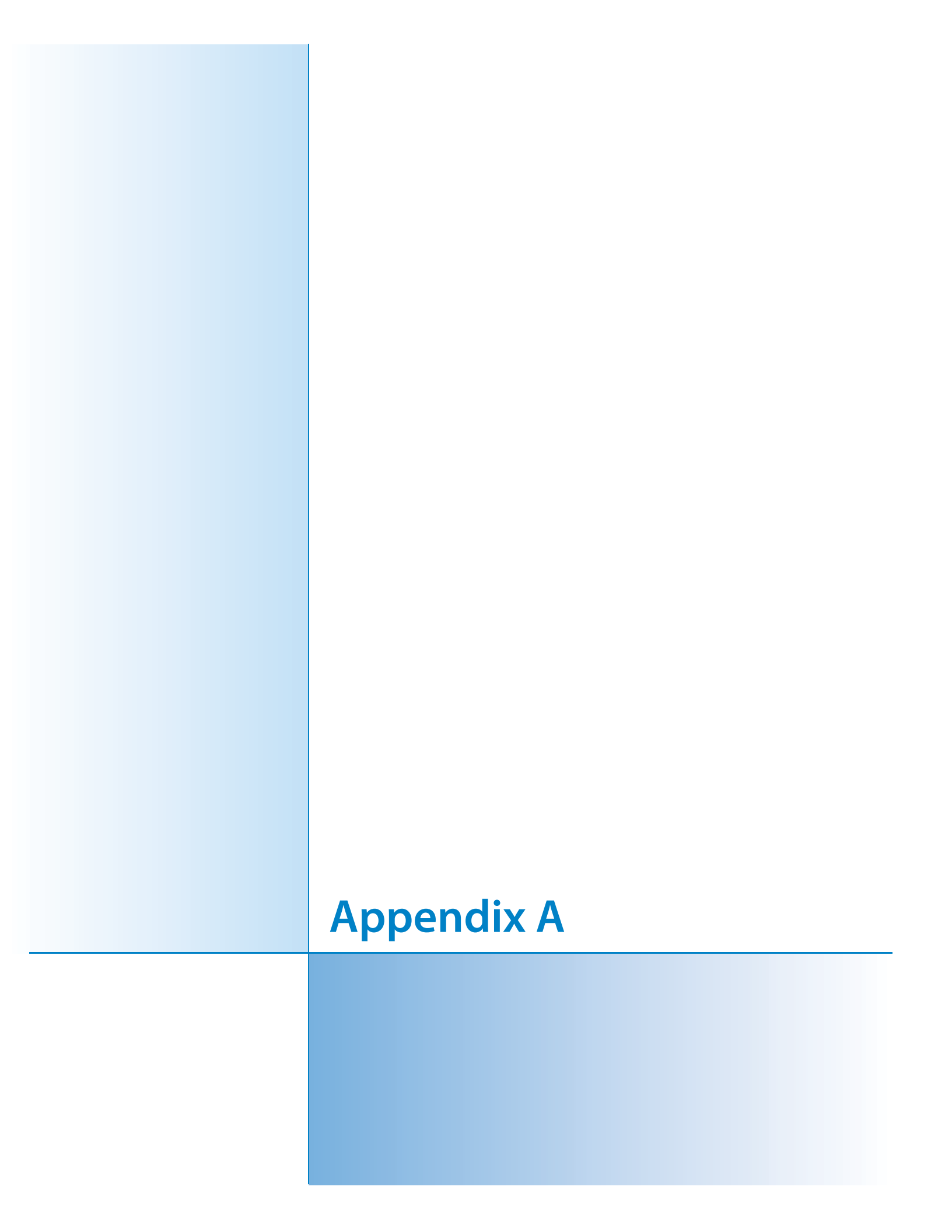
Hutchinson Mechanical Services  
Ed Hutchinson or Mike Hutchinson  
Phone: 888-777-4501  
Email: [DIcoordinator@hutchbiz.com](mailto:DIcoordinator@hutchbiz.com)

Any additional information on the Direct Install Program can be obtained by calling 866-NJSMART or by e-mail to [DirectInstall@trcsolutions.com](mailto:DirectInstall@trcsolutions.com)



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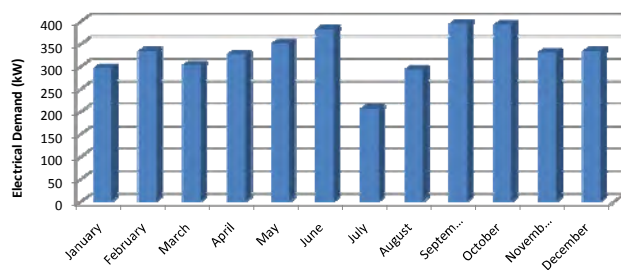
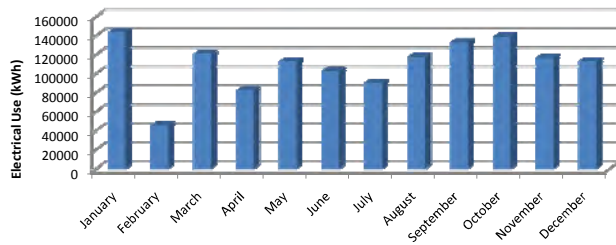
## Appendices

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## Appendix A

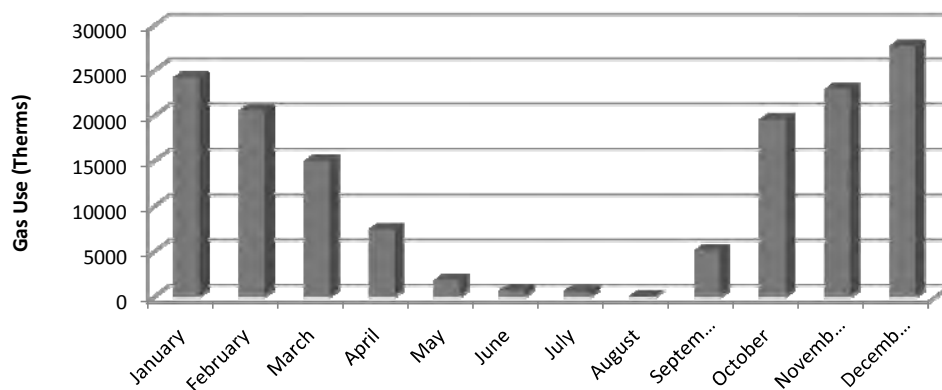
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|-----------------------|------------------|--------------------------|
| Energy Audit Building | BUILDING NAME    | Wall Intermediate School |
| Service Provider      | SERVICE PROVIDER | JCP&L                    |
| Account Number:       | ACCOUNT NUMBER   |                          |
| Meter Number          | METER NUMBER     |                          |

| 2009  |     |       |     |                 |               |              |             |              |           |       |  |
|-------|-----|-------|-----|-----------------|---------------|--------------|-------------|--------------|-----------|-------|--|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Jan   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| 2010  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |             |              |           |       |  |
| May   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 | \$ 20,713.51  | \$ 20,713.51 |             |              | 133006    | 394.4 |  |
| Oct   | 1   | Nov   | 1   |                 | \$ 21,518.93  | \$ 21,518.93 |             |              | 139006    | 392.4 |  |
| Nov   | 1   | Dec   | 1   |                 | \$ 18,081.55  | \$ 18,081.55 |             |              | 116606    | 330.8 |  |
| Dec   | 1   | Jan   | 1   | \$ 5,688.70     | \$ 11,912.25  | \$ 17,600.95 |             |              | 113200    | 333.6 |  |
| 2011  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   | \$ 6,408.45     | \$ 15,096.52  | \$ 21,504.97 |             |              | 143600    | 296.0 |  |
| Feb   | 1   | Mar   | 1   | \$ 3,556.00     | \$ 4,805.54   | \$ 8,361.54  |             |              | 45600     | 333.6 |  |
| Mar   | 1   | Apr   | 1   | \$ 4,688.82     | \$ 12,711.23  | \$ 17,400.05 |             |              | 120800    | 302.4 |  |
| Apr   | 1   | May   | 1   |                 | \$ 12,705.44  | \$ 12,705.44 |             |              | 82606     | 326.4 |  |
| May   | 1   | June  | 1   |                 | \$ 15,468.79  | \$ 15,468.79 |             |              | 113006    | 350.8 |  |
| June  | 1   | July  | 1   |                 | \$ 14,534.07  | \$ 14,534.07 |             |              | 103006    | 382.0 |  |
| July  | 1   | Aug   | 1   |                 | \$ 12,566.02  | \$ 12,566.02 |             |              | 90606     | 206.0 |  |
| Aug   | 1   | Sept  | 1   |                 | \$ 15,613.21  | \$ 15,613.21 |             |              | 117806    | 292.8 |  |
| Sept  | 1   | Oct   | 1   |                 |               |              |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               |              |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               |              |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               |              |             |              |           |       |  |



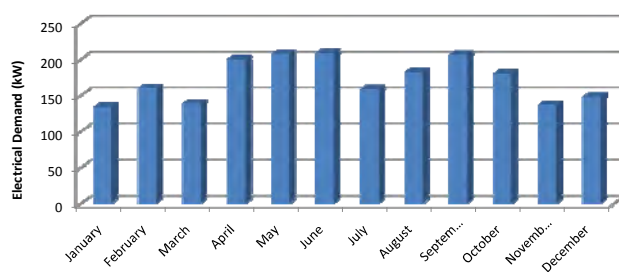
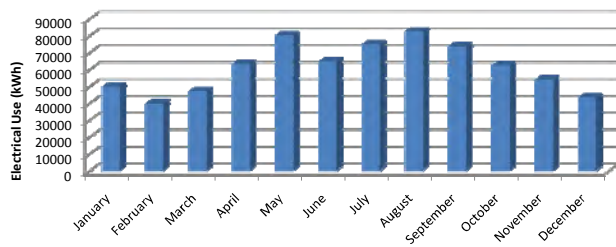
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|-----------------------|-------------------------|--------------------------|
| Energy Audit Building | <b>BUILDING NAME</b>    | Wall Intermediate School |
| Account:              | <b>SERVICE PROVIDER</b> | NJ Natural Gas           |
| Account Number:       | <b>ACCOUNT NUMBER</b>   |                          |
| Meter Number          | <b>METER NUMBER</b>     |                          |

| 2009  |     |       |     |                 |               |              |        |
|-------|-----|-------|-----|-----------------|---------------|--------------|--------|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |        |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |        |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |        |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| 2010  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   | \$ 1,252.43     | \$ 3,989.14   | \$ 5,241.57  | 5062   |
| Oct   | 1   | Nov   | 1   | \$ 4,879.95     | \$ 7,230.89   | \$ 12,110.84 | 19547  |
| Nov   | 1   | Dec   | 1   | \$ 9,509.83     | \$ 11,684.99  | \$ 21,194.82 | 22903  |
| Dec   | 1   | Jan   | 1   | \$ 14,378.53    | \$ 13,729.27  | \$ 28,107.80 | 27662  |
| 2011  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   | \$10,725.07     | \$ 12,236.22  | \$ 22,961.29 | 24191  |
| Feb   | 1   | Mar   | 1   | \$14,537.84     | \$ 11,024.36  | \$ 25,562.20 | 20517  |
| Mar   | 1   | Apr   | 1   | \$14,892.11     | \$ 8,250.72   | \$ 23,142.83 | 14920  |
| Apr   | 1   | May   | 1   | \$7,891.18      | \$ 5,025.71   | \$ 12,916.89 | 7418   |
| May   | 1   | June  | 1   | \$3,160.09      | \$ 2,599.66   | \$ 5,759.75  | 1775   |
| June  | 1   | July  | 1   | \$766.11        | \$ 2,116.14   | \$ 2,882.25  | 650    |
| July  | 1   | Aug   | 1   | \$373.10        | \$ 2,081.22   | \$ 2,454.32  | 569    |
| Aug   | 1   | Sept  | 1   | \$207.80        | \$ -          | \$ 207.80    | 0      |
| Sept  | 1   | Oct   | 1   |                 |               |              |        |
| Oct   | 1   | Nov   | 1   |                 |               |              |        |
| Nov   | 1   | Dec   | 1   |                 |               |              |        |
| Dec   | 1   | Jan   | 1   |                 |               |              |        |



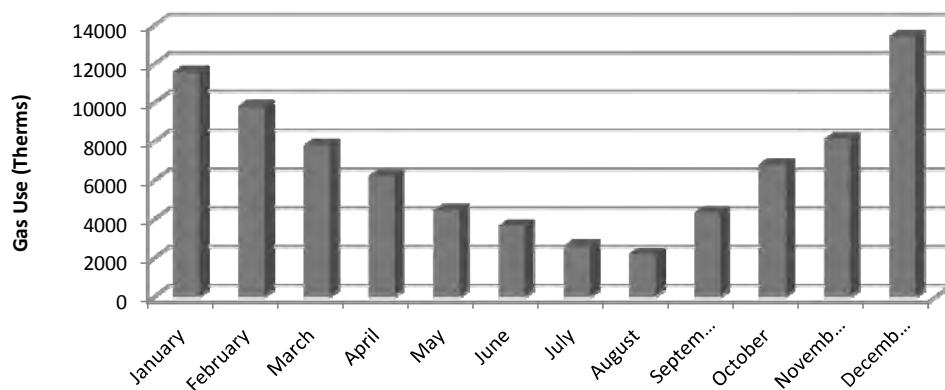
|                       |                  |          |
|-----------------------|------------------|----------|
| Energy Audit Building | BUILDING NAME    | Old Mill |
| Service Provider      | SERVICE PROVIDER | JCP&L    |
| Account Number:       | ACCOUNT NUMBER   |          |
| Meter Number          | METER NUMBER     |          |

| 2009  |     |       |     |                 |               |              |             |              |           |       |  |
|-------|-----|-------|-----|-----------------|---------------|--------------|-------------|--------------|-----------|-------|--|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Jan   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| 2010  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |             |              |           |       |  |
| May   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 | \$ 11,389.98  | \$ 11,389.98 |             |              | 73760     | 206.7 |  |
| Oct   | 1   | Nov   | 1   |                 | \$ 9,693.95   | \$ 9,693.95  |             |              | 62560     | 180.3 |  |
| Nov   | 1   | Dec   | 1   |                 | \$ 8,262.28   | \$ 8,262.28  |             |              | 54080     | 136.8 |  |
| Dec   | 1   | Jan   | 1   |                 | \$ 6,872.28   | \$ 6,872.28  |             |              | 43360     | 148.0 |  |
| 2011  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 | \$ 7,655.45   | \$ 7,655.45  |             |              | 49760     | 134.1 |  |
| Feb   | 1   | Mar   | 1   |                 | \$ 6,390.21   | \$ 6,390.21  |             |              | 39840     | 159.8 |  |
| Mar   | 1   | Apr   | 1   |                 | \$ 6,930.58   | \$ 6,930.58  |             |              | 47200     | 138.6 |  |
| Apr   | 1   | May   | 1   |                 | \$ 8,582.91   | \$ 8,582.91  |             |              | 63360     | 200.2 |  |
| May   | 1   | June  | 1   |                 | \$ 10,659.39  | \$ 10,659.39 |             |              | 80160     | 207.4 |  |
| June  | 1   | July  | 1   |                 | \$ 8,900.45   | \$ 8,900.45  |             |              | 64800     | 208.6 |  |
| July  | 1   | Aug   | 1   |                 | \$ 9,709.28   | \$ 9,709.28  |             |              | 74880     | 158.4 |  |
| Aug   | 1   | Sept  | 1   |                 | \$ 10,760.36  | \$ 10,760.36 |             |              | 82560     | 182.6 |  |
| Sept  | 1   | Oct   | 1   |                 |               |              |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               |              |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               |              |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               |              |             |              |           |       |  |



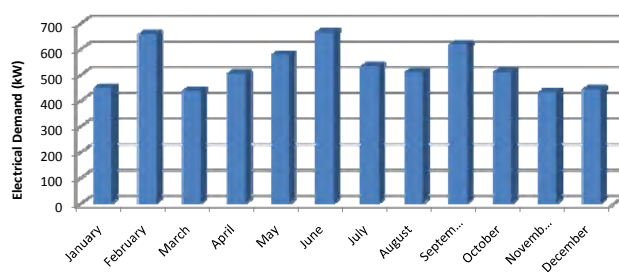
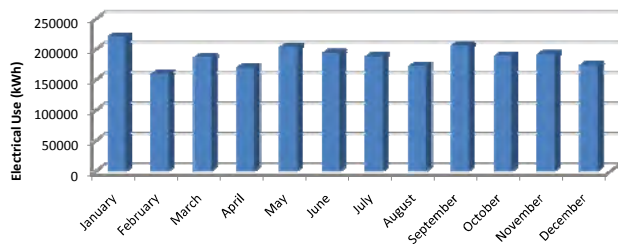
|                       |                         |                |
|-----------------------|-------------------------|----------------|
| Energy Audit Building | <b>BUILDING NAME</b>    | Old Mill       |
| Account:              | <b>SERVICE PROVIDER</b> | NJ Natural Gas |
| Account Number:       | <b>ACCOUNT NUMBER</b>   |                |
| Meter Number          | <b>METER NUMBER</b>     | 765560         |

| 2009  |     |       |     |                 |               |              |        |
|-------|-----|-------|-----|-----------------|---------------|--------------|--------|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |        |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |        |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |        |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| 2010  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   | \$ 2,056.07     | \$ 2,443.63   | \$ 4,499.70  | 4322   |
| Oct   | 1   | Nov   | 1   | \$ 3,603.90     | \$ 3,562.29   | \$ 7,166.19  | 6811   |
| Nov   | 1   | Dec   | 1   | \$ 4,418.28     | \$ 4,127.92   | \$ 8,546.20  | 8124   |
| Dec   | 1   | Jan   | 1   | \$ 6,819.43     | \$ 6,400.65   | \$ 13,220.08 | 13411  |
| 2011  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   | \$2,607.53      | \$ 5,606.76   | \$ 8,214.29  | 11566  |
| Feb   | 1   | Mar   | 1   | \$6,950.89      | \$ 4,849.68   | \$ 11,800.57 | 9805   |
| Mar   | 1   | Apr   | 1   | \$9,279.33      | \$ 3,980.08   | \$ 13,259.41 | 7782   |
| Apr   | 1   | May   | 1   | \$3,849.99      | \$ 3,297.67   | \$ 7,147.66  | 6195   |
| May   | 1   | June  | 1   | \$2,865.50      | \$ 2,539.41   | \$ 5,404.91  | 4431   |
| June  | 1   | July  | 1   | \$2,093.65      | \$ 2,198.18   | \$ 4,291.83  | 3637   |
| July  | 1   | Aug   | 1   | \$1,758.84      | \$ 1,749.95   | \$ 3,508.79  | 2595   |
| Aug   | 1   | Sept  | 1   | \$1,368.18      | \$ 1,569.28   | \$ 2,937.46  | 2175   |
| Sept  | 1   | Oct   | 1   |                 |               |              |        |
| Oct   | 1   | Nov   | 1   |                 |               |              |        |
| Nov   | 1   | Dec   | 1   |                 |               |              |        |
| Dec   | 1   | Jan   | 1   |                 |               |              |        |



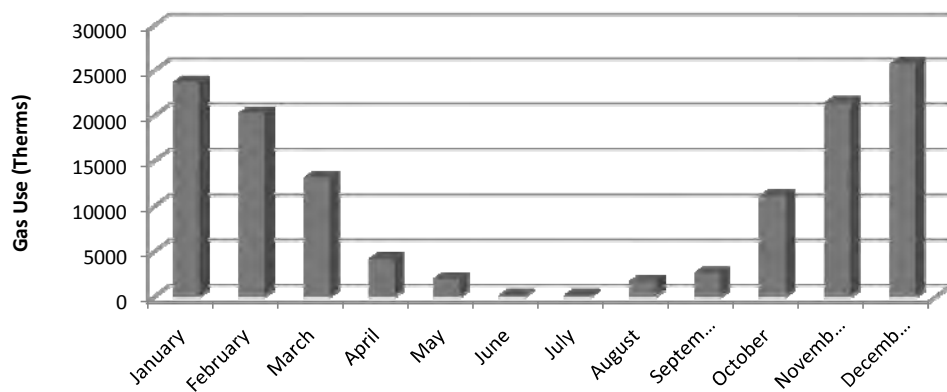
|                       |                  |             |
|-----------------------|------------------|-------------|
| Energy Audit Building | BUILDING NAME    | High School |
| Service Provider      | SERVICE PROVIDER | JCP&L       |
| Account Number:       | ACCOUNT NUMBER   |             |
| Meter Number          | METER NUMBER     |             |

| 2009  |     |       |     |                 |               |              |             |              |           |       |  |
|-------|-----|-------|-----|-----------------|---------------|--------------|-------------|--------------|-----------|-------|--|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Jan   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| 2010  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |             |              |           |       |  |
| May   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 | \$ 32,121.76  | \$ 32,121.76 |             |              | 206400    | 616.8 |  |
| Oct   | 1   | Nov   | 1   |                 | \$ 29,040.51  | \$ 29,040.51 |             |              | 188800    | 511.2 |  |
| Nov   | 1   | Dec   | 1   |                 | \$ 28,987.82  | \$ 28,987.82 |             |              | 192000    | 432.0 |  |
| Dec   | 1   | Jan   | 1   |                 | \$ 26,550.07  | \$ 26,550.07 |             |              | 173600    | 443.2 |  |
| 2011  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   | \$ 4,627.50     | \$ 28,392.84  | \$ 33,020.34 |             |              | 220800    | 448.0 |  |
| Feb   | 1   | Mar   | 1   | \$ 7,754.45     | \$ 16,745.19  | \$ 24,499.64 |             |              | 159200    | 657.6 |  |
| Mar   | 1   | Apr   | 1   |                 | \$ 26,666.87  | \$ 26,666.87 |             |              | 186400    | 438.4 |  |
| Apr   | 1   | May   | 1   |                 | \$ 24,943.44  | \$ 24,943.44 |             |              | 169600    | 504.0 |  |
| May   | 1   | June  | 1   |                 | \$ 27,376.19  | \$ 27,376.19 |             |              | 203200    | 576.8 |  |
| June  | 1   | July  | 1   |                 | \$ 26,888.17  | \$ 26,888.17 |             |              | 193600    | 665.6 |  |
| July  | 1   | Aug   | 1   |                 | \$ 25,315.85  | \$ 25,315.85 |             |              | 188000    | 532.8 |  |
| Aug   | 1   | Sept  | 1   |                 | \$ 23,314.73  | \$ 23,314.73 |             |              | 172000    | 509.6 |  |
| Sept  | 1   | Oct   | 1   |                 |               |              |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               |              |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               |              |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               |              |             |              |           |       |  |



|                       |                         |                |
|-----------------------|-------------------------|----------------|
| Energy Audit Building | <b>BUILDING NAME</b>    | High School    |
| Account:              | <b>SERVICE PROVIDER</b> | NJ Natural Gas |
| Account Number:       | <b>ACCOUNT NUMBER</b>   |                |
| Meter Number          | <b>METER NUMBER</b>     |                |

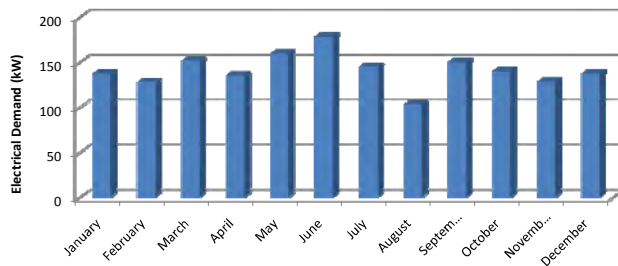
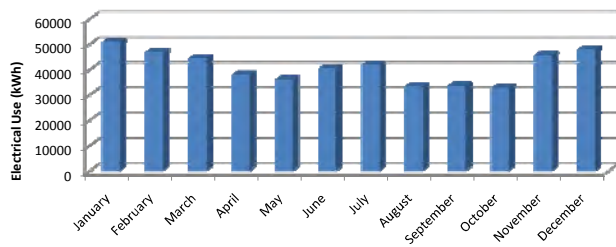
| 2009  |     |       |     |                 |               |              |        |
|-------|-----|-------|-----|-----------------|---------------|--------------|--------|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |        |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |        |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |        |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| 2010  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   | \$ 950.68       | \$ 2,943.50   | \$ 3,894.18  | 2594   |
| Oct   | 1   | Nov   | 1   | \$ 3,559.32     | \$ 6,611.90   | \$ 10,171.22 | 11098  |
| Nov   | 1   | Dec   | 1   | \$ 8,526.54     | \$ 11,043.21  | \$ 19,569.75 | 21401  |
| Dec   | 1   | Jan   | 1   | \$ 13,655.12    | \$ 12,900.60  | \$ 26,555.72 | 25725  |
| 2011  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   | \$9,974.10      | \$ 12,017.76  | \$ 21,991.86 | 23673  |
| Feb   | 1   | Mar   | 1   | \$14,226.78     | \$ 10,912.04  | \$ 25,138.82 | 20245  |
| Mar   | 1   | Apr   | 1   | \$14,414.76     | \$ 7,469.71   | \$ 21,884.47 | 13094  |
| Apr   | 1   | May   | 1   | \$6,451.16      | \$ 3,621.79   | \$ 10,072.95 | 4143   |
| May   | 1   | June  | 1   | \$1,956.26      | \$ 2,687.42   | \$ 4,643.68  | 1970   |
| June  | 1   | July  | 1   | \$745.71        | \$ 1,885.24   | \$ 2,630.95  | 104    |
| July  | 1   | Aug   | 1   | \$62.16         | \$ 1,885.24   | \$ 1,947.40  | 104    |
| Aug   | 1   | Sept  | 1   | \$421.56        | \$ 2,555.36   | \$ 2,976.92  | 1663   |
| Sept  | 1   | Oct   | 1   |                 |               |              |        |
| Oct   | 1   | Nov   | 1   |                 |               |              |        |
| Nov   | 1   | Dec   | 1   |                 |               |              |        |
| Dec   | 1   | Jan   | 1   |                 |               |              |        |





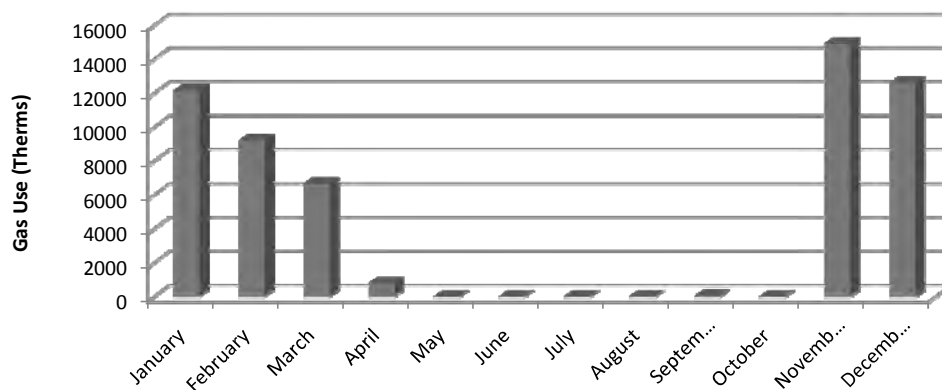
|                       |                  |         |
|-----------------------|------------------|---------|
| Energy Audit Building | BUILDING NAME    | Central |
| Service Provider      | SERVICE PROVIDER | JCP&L   |
| Account Number:       | ACCOUNT NUMBER   |         |
| Meter Number          | METER NUMBER     |         |

| 2009  |     |       |     |                 |               |              |             |              |           |       |  |
|-------|-----|-------|-----|-----------------|---------------|--------------|-------------|--------------|-----------|-------|--|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Jan   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| 2010  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |             |              |           |       |  |
| May   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ 5,552.03  |             |              | 33600     | 150.4 |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ 5,355.83  |             |              | 32640     | 140.3 |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ 7,049.73  |             |              | 45600     | 128.3 |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ 7,436.69  |             |              | 48000     | 137.4 |  |
| 2011  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ 7,829.61  |             |              | 50880     | 137.4 |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ 7,221.78  |             |              | 46880     | 127.8 |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ 6,703.91  |             |              | 44480     | 151.8 |  |
| Apr   | 1   | May   | 1   |                 |               | \$ 5,724.09  |             |              | 37920     | 135.5 |  |
| May   | 1   | June  | 1   |                 |               | \$ 5,248.66  |             |              | 36000     | 159.7 |  |
| June  | 1   | July  | 1   |                 |               | \$ 5,876.75  |             |              | 40320     | 178.6 |  |
| July  | 1   | Aug   | 1   |                 |               | \$ 5,826.94  |             |              | 41920     | 145.1 |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ 4,543.86  |             |              | 33280     | 103.4 |  |
| Sept  | 1   | Oct   | 1   |                 |               |              |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               |              |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               |              |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               |              |             |              |           |       |  |



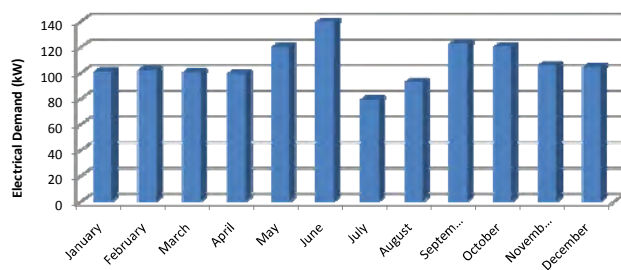
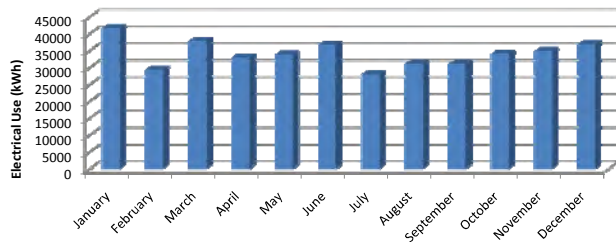
|                       |                         |                |
|-----------------------|-------------------------|----------------|
| Energy Audit Building | <b>BUILDING NAME</b>    | Central        |
| Account:              | <b>SERVICE PROVIDER</b> | NJ Natural Gas |
| Account Number:       | <b>ACCOUNT NUMBER</b>   |                |
| Meter Number          | <b>METER NUMBER</b>     |                |

| 2009  |     |       |     |                 |               |              |        |
|-------|-----|-------|-----|-----------------|---------------|--------------|--------|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |        |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |        |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |        |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| 2010  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   | \$ 8.06         | \$ 742.35     | \$ 750.41    | 34     |
| Oct   | 1   | Nov   | 1   | \$ 11.97        | \$ 727.96     | \$ 739.93    | 0      |
| Nov   | 1   | Dec   | 1   | \$ 3,057.16     | \$ 7,142.45   | \$ 10,199.61 | 14917  |
| Dec   | 1   | Jan   | 1   | \$ 8,231.84     | \$ 6,150.07   | \$ 14,381.91 | 12612  |
| 2011  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   | \$5,227.02      | \$5,943.70    | \$11,170.72  | 12132  |
| Feb   | 1   | Mar   | 1   | \$7,291.21      | \$4,819.90    | \$12,111.11  | 9180   |
| Mar   | 1   | Apr   | 1   | \$6,660.50      | \$3,591.74    | \$10,252.24  | 6662   |
| Apr   | 1   | May   | 1   | \$3,018.39      | \$1,068.41    | \$4,086.80   | 792    |
| May   | 1   | June  | 1   | \$300.33        | \$727.96      | \$1,028.29   | 0      |
| June  | 1   | July  | 1   |                 | \$727.96      | \$727.96     | 0      |
| July  | 1   | Aug   | 1   |                 | \$727.96      | \$727.96     | 0      |
| Aug   | 1   | Sept  | 1   |                 | \$727.96      | \$727.96     | 0      |
| Sept  | 1   | Oct   | 1   |                 |               |              |        |
| Oct   | 1   | Nov   | 1   |                 |               |              |        |
| Nov   | 1   | Dec   | 1   |                 |               |              |        |
| Dec   | 1   | Jan   | 1   |                 |               |              |        |



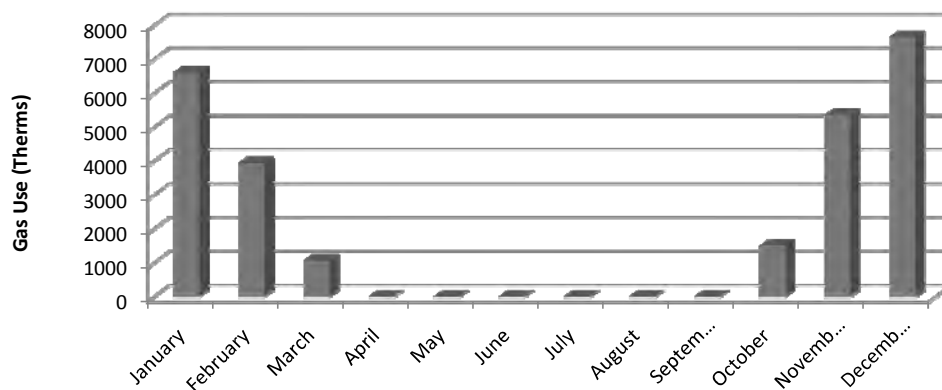
|                       |                  |           |
|-----------------------|------------------|-----------|
| Energy Audit Building | BUILDING NAME    | Allenwood |
| Service Provider      | SERVICE PROVIDER | JCP&L     |
| Account Number:       | ACCOUNT NUMBER   |           |
| Meter Number          | METER NUMBER     |           |

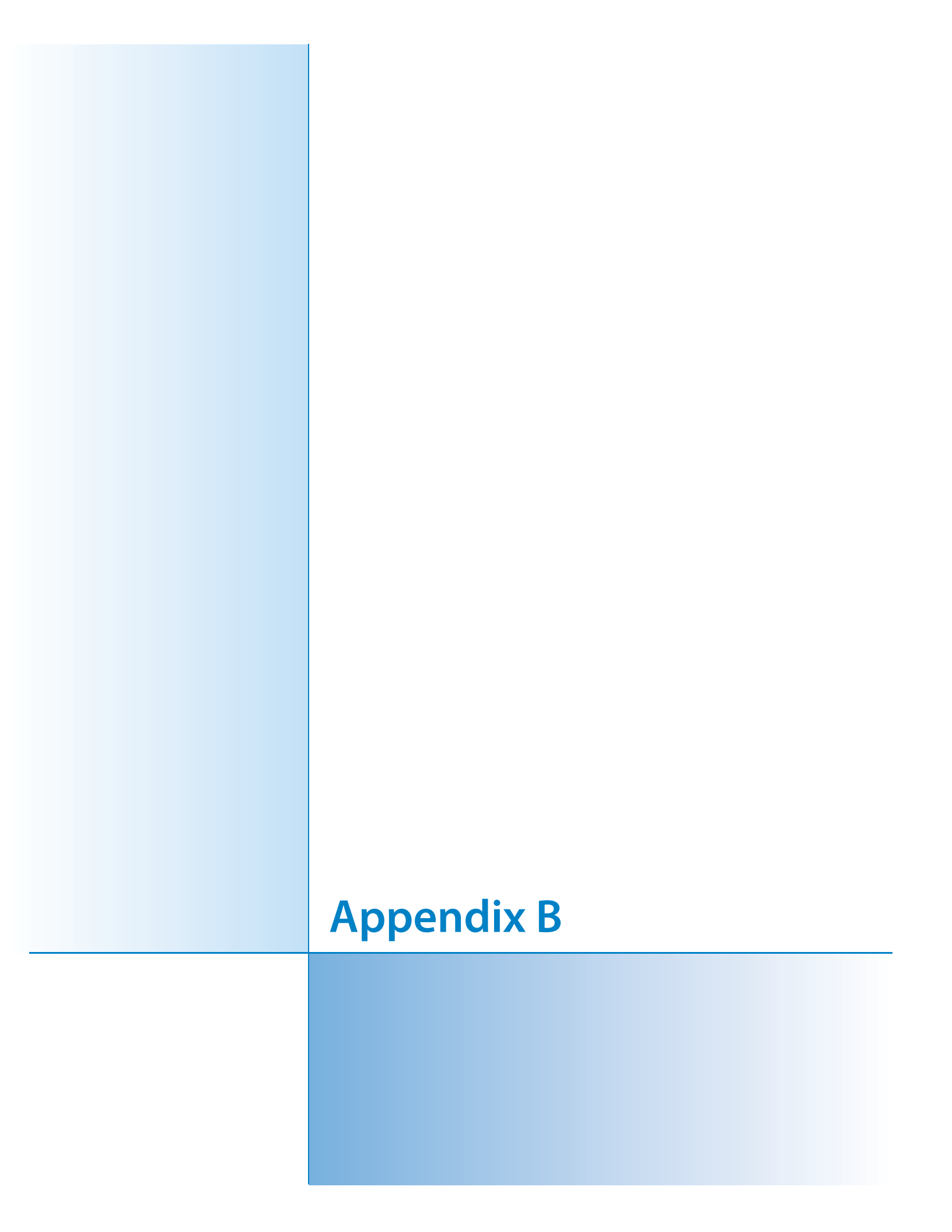
| 2009  |     |       |     |                 |               |              |             |              |           |       |  |
|-------|-----|-------|-----|-----------------|---------------|--------------|-------------|--------------|-----------|-------|--|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Jan   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |             |              |           |       |  |
| 2010  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |             |              |           |       |  |
| May   | 1   | June  | 1   |                 |               | \$ -         |             |              |           |       |  |
| June  | 1   | July  | 1   |                 |               | \$ -         |             |              |           |       |  |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |             |              |           |       |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |             |              |           |       |  |
| Sept  | 1   | Oct   | 1   |                 |               | \$ 5,082.80  |             |              |           | 122.6 |  |
| Oct   | 1   | Nov   | 1   |                 |               | \$ 5,482.38  |             |              | 31029     | 120.3 |  |
| Nov   | 1   | Dec   | 1   |                 |               | \$ 5,501.43  |             |              | 34069     | 105.8 |  |
| Dec   | 1   | Jan   | 1   |                 |               | \$ 5,753.72  |             |              | 34809     | 104.3 |  |
| 2011  |     |       |     |                 |               |              |             |              |           |       |  |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | On Peak kWh | Off Peak kWh | Total kWh | KW    |  |
| Jan   | 1   | Feb   | 1   |                 |               | \$ 6,385.84  |             |              | 37749     | 100.8 |  |
| Feb   | 1   | Mar   | 1   |                 |               | \$ 4,713.50  |             |              | 32949     | 102.1 |  |
| Mar   | 1   | Apr   | 1   |                 |               | \$ 5,578.08  |             |              | 33749     | 100.2 |  |
| Apr   | 1   | May   | 1   |                 |               | \$ 4,913.50  |             |              | 36629     | 99.2  |  |
| May   | 1   | June  | 1   |                 |               | \$ 4,778.26  |             |              | 27911     | 120.0 |  |
| June  | 1   | July  | 1   |                 |               | \$ 5,243.02  |             |              | 31029     | 139.4 |  |
| July  | 1   | Aug   | 1   |                 |               | \$ 4,000.85  |             |              |           | 79.0  |  |
| Aug   | 1   | Sept  | 1   |                 |               | \$ 4,272.67  |             |              |           | 92.6  |  |
| Sept  | 1   | Oct   | 1   |                 |               |              |             |              |           |       |  |
| Oct   | 1   | Nov   | 1   |                 |               |              |             |              |           |       |  |
| Nov   | 1   | Dec   | 1   |                 |               |              |             |              |           |       |  |
| Dec   | 1   | Jan   | 1   |                 |               |              |             |              |           |       |  |



|                       |                         |                |
|-----------------------|-------------------------|----------------|
| Energy Audit Building | <b>BUILDING NAME</b>    | Allenwood      |
| Account:              | <b>SERVICE PROVIDER</b> | NJ Natural Gas |
| Account Number:       | <b>ACCOUNT NUMBER</b>   |                |
| Meter Number          | <b>METER NUMBER</b>     |                |

| 2009  |     |       |     |                 |               |              |        |
|-------|-----|-------|-----|-----------------|---------------|--------------|--------|
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   |                 |               | \$ -         |        |
| Oct   | 1   | Nov   | 1   |                 |               | \$ -         |        |
| Nov   | 1   | Dec   | 1   |                 |               | \$ -         |        |
| Dec   | 1   | Jan   | 1   |                 |               | \$ -         |        |
| 2010  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   |                 |               | \$ -         |        |
| Feb   | 1   | Mar   | 1   |                 |               | \$ -         |        |
| Mar   | 1   | Apr   | 1   |                 |               | \$ -         |        |
| Apr   | 1   | May   | 1   |                 |               | \$ -         |        |
| May   | 1   | June  | 1   |                 |               | \$ -         |        |
| June  | 1   | July  | 1   |                 |               | \$ -         |        |
| July  | 1   | Aug   | 1   |                 |               | \$ -         |        |
| Aug   | 1   | Sept  | 1   |                 |               | \$ -         |        |
| Sept  | 1   | Oct   | 1   | \$ -            | \$ 461.17     | \$ 461.17    | 0      |
| Oct   | 1   | Nov   | 1   | \$ 798.69       | \$ 1,101.94   | \$ 1,900.63  | 1491   |
| Nov   | 1   | Dec   | 1   | \$ 2,556.69     | \$ 2,764.65   | \$ 5,321.34  | 5357   |
| Dec   | 1   | Jan   | 1   | \$ 3,715.72     | \$ 3,752.46   | \$ 7,468.18  | 7655   |
| 2011  |     |       |     |                 |               |              |        |
| Month | Day | Month | Day | Delivery Charge | Supply Charge | Total Charge | Therms |
| Jan   | 1   | Feb   | 1   | \$920.02        | \$3,297.87    | \$4,217.89   | 6599   |
| Feb   | 1   | Mar   | 1   | \$4,654.66      | \$2,150.84    | \$6,805.50   | 3930   |
| Mar   | 1   | Apr   | 1   | \$5,838.80      | \$918.73      | \$6,757.53   | 1064   |
| Apr   | 1   | May   | 1   | \$1,018.11      | \$461.17      | \$1,479.28   | 0      |
| May   | 1   | June  | 1   | \$104.38        | \$461.17      | \$565.55     | 0      |
| June  | 1   | July  | 1   |                 | \$461.17      | \$461.17     | 0      |
| July  | 1   | Aug   | 1   |                 | \$461.17      | \$461.17     | 0      |
| Aug   | 1   | Sept  | 1   |                 | \$461.17      | \$461.17     | 0      |
| Sept  | 1   | Oct   | 1   |                 |               |              |        |
| Oct   | 1   | Nov   | 1   |                 |               |              |        |
| Nov   | 1   | Dec   | 1   |                 |               |              |        |
| Dec   | 1   | Jan   | 1   |                 |               |              |        |



The graphic consists of a large light blue rectangle on the left side of the page. A horizontal line extends from the right edge of this rectangle across the page. A vertical line extends from the bottom of the light blue rectangle down to the bottom of the page. These two lines intersect at the bottom right corner of the light blue rectangle. In the bottom right corner of the page, there is a smaller, darker blue rectangle. The text "Appendix B" is positioned at the intersection of the horizontal and vertical lines, just above the darker blue rectangle.

## Appendix B



# STATEMENT OF ENERGY PERFORMANCE

## Wall Intermediate School

**Building ID:** 3201052  
**For 12-month Period Ending:** August 31, 2011<sup>1</sup>  
**Date SEP becomes ineligible:** N/A

**Date SEP Generated:** October 29, 2012

**Facility**  
 Wall Intermediate School  
 2801 Allaire Road  
 Wall, NJ 07719

**Facility Owner**  
 Wall Township Public School  
 1620 18th Avenue  
 Wall, NJ 07719

**Primary Contact for this Facility**  
 Dawn Choma  
 1620 18th Avenue  
 Wall, NJ 07719

**Year Built:** 1900  
**Gross Floor Area (ft<sup>2</sup>):** 126,000

**Energy Performance Rating<sup>2</sup> (1-100):** 6

### Site Energy Use Summary<sup>3</sup>

|                                   |            |
|-----------------------------------|------------|
| Electricity - Grid Purchase(kBtu) | 4,501,315  |
| Natural Gas (kBtu) <sup>4</sup>   | 14,521,400 |
| Total Energy (kBtu)               | 19,022,715 |

### Energy Intensity<sup>4</sup>

|                                   |     |
|-----------------------------------|-----|
| Site (kBtu/ft <sup>2</sup> /yr)   | 151 |
| Source (kBtu/ft <sup>2</sup> /yr) | 240 |

### Emissions (based on site energy use)

|                                                     |       |
|-----------------------------------------------------|-------|
| Greenhouse Gas Emissions (MtCO <sub>2</sub> e/year) | 1,410 |
|-----------------------------------------------------|-------|

### Electric Distribution Utility

Jersey Central Power & Light Co [FirstEnergy Corp]

### National Median Comparison

|                                              |             |
|----------------------------------------------|-------------|
| National Median Site EUI                     | 90          |
| National Median Source EUI                   | 143         |
| % Difference from National Median Source EUI | 68%         |
| Building Type                                | K-12 School |

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

### Meets Industry Standards<sup>5</sup> for Indoor Environmental Conditions:

|                                               |     |
|-----------------------------------------------|-----|
| Ventilation for Acceptable Indoor Air Quality | N/A |
| Acceptable Thermal Environmental Conditions   | N/A |
| Adequate Illumination                         | N/A |

### Certifying Professional

Matt Goss  
 11 British American Blvd  
 Latham, NY 12110

#### Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

## ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

**Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.**

NOTE: You must check each box to indicate that each value is correct, OR include a note.

| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
|------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| <b>Building Name</b>                                 | Wall Intermediate School              | Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | <input type="checkbox"/>            |
| <b>Type</b>                                          | K-12 School                           | Is this an accurate description of the space in question?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Location</b>                                      | 2801 Allaire Road, Wall, NJ 07719     | Is this address accurate and complete? Correct weather normalization requires an accurate zip code.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Single Structure</b>                              | Single Facility                       | Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| School (K-12 School)                                 |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                     |
| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
| <b>Gross Floor Area</b>                              | 126,000 Sq. Ft.                       | Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.                                                                    |       | <input type="checkbox"/>            |
| <b>Open Weekends?</b>                                | No                                    | Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days. |       | <input type="checkbox"/>            |
| <b>Number of PCs</b>                                 | 221 (Default)                         | Is this the number of personal computers in the K12 School?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| <b>Number of walk-in refrigeration/freezer units</b> | 1 (Default)                           | Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Presence of cooking facilities</b>                | Yes                                   | Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".                                                                                                                                                                                                                                                                              |       | <input type="checkbox"/>            |
| <b>Percent Cooled</b>                                | 100 % (Default)                       | Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Percent Heated</b>                                | 100 %                                 | Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Months</b>                                        | 10(Optional)                          | Is this school in operation for at least 8 months of the year?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | <input type="checkbox"/>            |

|              |    |                                                                                                                                                                                                                                                                                                                |                          |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| High School? | No | Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'. | <input type="checkbox"/> |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|



# ENERGY STAR® Data Checklist for Commercial Buildings

## Energy Consumption

**Power Generation Plant or Distribution Utility:** Jersey Central Power & Light Co [FirstEnergy Corp]

| Fuel Type: Electricity                                                                                                               |            |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------|
| <b>Meter: Electricity (kWh (thousand Watt-hours))</b><br><b>Space(s): Entire Facility</b><br><b>Generation Method: Grid Purchase</b> |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (kWh (thousand Watt-hours)) |
| 08/01/2011                                                                                                                           | 08/31/2011 | 117,806.00                             |
| 07/01/2011                                                                                                                           | 07/31/2011 | 90,606.00                              |
| 06/01/2011                                                                                                                           | 06/30/2011 | 103,006.00                             |
| 05/01/2011                                                                                                                           | 05/31/2011 | 113,006.00                             |
| 04/01/2011                                                                                                                           | 04/30/2011 | 82,606.00                              |
| 03/01/2011                                                                                                                           | 03/31/2011 | 120,800.00                             |
| 02/01/2011                                                                                                                           | 02/28/2011 | 45,600.00                              |
| 01/01/2011                                                                                                                           | 01/31/2011 | 143,806.00                             |
| 12/01/2010                                                                                                                           | 12/31/2010 | 113,406.00                             |
| 11/01/2010                                                                                                                           | 11/30/2010 | 116,606.00                             |
| 10/01/2010                                                                                                                           | 10/31/2010 | 139,006.00                             |
| 09/01/2010                                                                                                                           | 09/30/2010 | 133,006.00                             |
| <b>Electricity Consumption (kWh (thousand Watt-hours))</b>                                                                           |            | <b>1,319,260.00</b>                    |
| <b>Electricity Consumption (kBtu (thousand Btu))</b>                                                                                 |            | <b>4,501,315.12</b>                    |
| <b>Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))</b>                                                           |            | <b>4,501,315.12</b>                    |
| Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?                         |            | <input type="checkbox"/>               |
| Fuel Type: Natural Gas                                                                                                               |            |                                        |
| <b>Meter: Natural Gas (therms)</b><br><b>Space(s): Entire Facility</b>                                                               |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (therms)                    |
| 08/01/2011                                                                                                                           | 08/31/2011 | 0.00                                   |
| 07/01/2011                                                                                                                           | 07/31/2011 | 569.00                                 |
| 06/01/2011                                                                                                                           | 06/30/2011 | 650.00                                 |
| 05/01/2011                                                                                                                           | 05/31/2011 | 1,775.00                               |
| 04/01/2011                                                                                                                           | 04/30/2011 | 7,418.00                               |
| 03/01/2011                                                                                                                           | 03/31/2011 | 14,920.00                              |
| 02/01/2011                                                                                                                           | 02/28/2011 | 20,517.00                              |
| 01/01/2011                                                                                                                           | 01/31/2011 | 24,191.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 27,662.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 22,903.00                              |

|                                                                                                     |            |                          |
|-----------------------------------------------------------------------------------------------------|------------|--------------------------|
| 10/01/2010                                                                                          | 10/31/2010 | 19,547.00                |
| 09/01/2010                                                                                          | 09/30/2010 | 5,062.00                 |
| <b>Natural Gas Consumption (therms)</b>                                                             |            | <b>145,214.00</b>        |
| <b>Natural Gas Consumption (kBtu (thousand Btu))</b>                                                |            | <b>14,521,400.00</b>     |
| <b>Total Natural Gas Consumption (kBtu (thousand Btu))</b>                                          |            | <b>14,521,400.00</b>     |
| <b>Is this the total Natural Gas consumption at this building including all Natural Gas meters?</b> |            | <input type="checkbox"/> |

#### Additional Fuels

Do the fuel consumption totals shown above represent the total energy use of this building?  
Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.

☐

#### On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.

☐

## Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature is required when applying for the ENERGY STAR.

# FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

## Facility

Wall Intermediate School  
2801 Allaire Road  
Wall, NJ 07719

## Facility Owner

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

## Primary Contact for this Facility

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

## General Information

| Wall Intermediate School                               |                 |
|--------------------------------------------------------|-----------------|
| Gross Floor Area Excluding Parking: (ft <sup>2</sup> ) | 126,000         |
| Year Built                                             | 1900            |
| For 12-month Evaluation Period Ending Date:            | August 31, 2011 |

## Facility Space Use Summary

| School                                                     |               |
|------------------------------------------------------------|---------------|
| Space Type                                                 | K-12 School   |
| Gross Floor Area (ft <sup>2</sup> )                        | 126,000       |
| Open Weekends?                                             | No            |
| Number of PCs <sup>d</sup>                                 | 221           |
| Number of walk-in refrigeration/freezer units <sup>d</sup> | 1             |
| Presence of cooking facilities                             | Yes           |
| Percent Cooled <sup>d</sup>                                | 100           |
| Percent Heated                                             | 100           |
| Months <sup>o</sup>                                        | 10            |
| High School?                                               | No            |
| School District <sup>o</sup>                               | Wall Township |

## Energy Performance Comparison

| Performance Metrics                       | Evaluation Periods                  |                                      | Comparisons   |        |                 |
|-------------------------------------------|-------------------------------------|--------------------------------------|---------------|--------|-----------------|
|                                           | Current<br>(Ending Date 08/31/2011) | Baseline<br>(Ending Date 08/31/2011) | Rating of 75  | Target | National Median |
| Energy Performance Rating                 | 6                                   | 6                                    | 75            | N/A    | 50              |
| Energy Intensity                          |                                     |                                      |               |        |                 |
| Site (kBtu/ft <sup>2</sup> )              | 151                                 | 151                                  | 70            | N/A    | 90              |
| Source (kBtu/ft <sup>2</sup> )            | 240                                 | 240                                  | 112           | N/A    | 143             |
| Energy Cost                               |                                     |                                      |               |        |                 |
| \$/year                                   | \$ 276,200.02                       | \$ 276,200.02                        | \$ 128,705.51 | N/A    | \$ 164,600.36   |
| \$/ft <sup>2</sup> /year                  | \$ 2.19                             | \$ 2.19                              | \$ 1.02       | N/A    | \$ 1.31         |
| Greenhouse Gas Emissions                  |                                     |                                      |               |        |                 |
| MtCO <sub>2</sub> e/year                  | 1,410                               | 1,410                                | 657           | N/A    | 840             |
| kgCO <sub>2</sub> e/ft <sup>2</sup> /year | 11                                  | 11                                   | 5             | N/A    | 7               |

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.

# Statement of Energy Performance

## 2011

Wall Intermediate School  
2801 Allaire Road  
Wall, NJ 07719

Portfolio Manager Building ID: 3201052

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit [energystar.gov/benchmark](http://energystar.gov/benchmark).

This building's  
score

6

1

50

100

Least Efficient

Median

Most Efficient

This building uses 240 kBtu per square foot per year.\*

\*Based on source energy intensity for the 12 month period ending August 2011

Buildings with a score of  
75 or higher may qualify  
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S.  
Environmental Protection Agency's measurement standards, found at [energystar.gov](http://energystar.gov)

Date of certification





# STATEMENT OF ENERGY PERFORMANCE

## Wall High School

Building ID: 3200977

For 12-month Period Ending: August 31, 2011<sup>1</sup>

Date SEP becomes ineligible: N/A

Date SEP Generated: October 29, 2012

**Facility**

Wall High School  
1630 18th Avenue  
Wall, NJ 07719

**Facility Owner**

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

**Primary Contact for this Facility**

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

Year Built: 1900

Gross Floor Area (ft<sup>2</sup>): 186,340Energy Performance Rating<sup>2</sup> (1-100) 15**Site Energy Use Summary<sup>3</sup>**

|                                   |            |
|-----------------------------------|------------|
| Electricity - Grid Purchase(kBtu) | 7,689,283  |
| Natural Gas (kBtu) <sup>4</sup>   | 12,581,400 |
| Total Energy (kBtu)               | 20,270,683 |

**Energy Intensity<sup>4</sup>**

|                                   |     |
|-----------------------------------|-----|
| Site (kBtu/ft <sup>2</sup> /yr)   | 109 |
| Source (kBtu/ft <sup>2</sup> /yr) | 209 |

**Emissions (based on site energy use)**

|                                                     |       |
|-----------------------------------------------------|-------|
| Greenhouse Gas Emissions (MtCO <sub>2</sub> e/year) | 1,758 |
|-----------------------------------------------------|-------|

**Electric Distribution Utility**

Jersey Central Power &amp; Light Co [FirstEnergy Corp]

**National Median Comparison**

|                                              |             |
|----------------------------------------------|-------------|
| National Median Site EUI                     | 77          |
| National Median Source EUI                   | 147         |
| % Difference from National Median Source EUI | 42%         |
| Building Type                                | K-12 School |

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

**Meets Industry Standards<sup>5</sup> for Indoor Environmental Conditions:**

|                                               |     |
|-----------------------------------------------|-----|
| Ventilation for Acceptable Indoor Air Quality | N/A |
| Acceptable Thermal Environmental Conditions   | N/A |
| Adequate Illumination                         | N/A |

**Certifying Professional**

Matt Goss  
11 British American Blvd  
Latham, NY 12110

**Notes:**

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

## ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

**Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.**

NOTE: You must check each box to indicate that each value is correct, OR include a note.

| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
|------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| <b>Building Name</b>                                 | Wall High School                      | Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | <input type="checkbox"/>            |
| <b>Type</b>                                          | K-12 School                           | Is this an accurate description of the space in question?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Location</b>                                      | 1630 18th Avenue, Wall, NJ 07719      | Is this address accurate and complete? Correct weather normalization requires an accurate zip code.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Single Structure</b>                              | Single Facility                       | Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| School (K-12 School)                                 |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                     |
| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
| <b>Gross Floor Area</b>                              | 186,340 Sq. Ft.                       | Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.                                                                    |       | <input type="checkbox"/>            |
| <b>Open Weekends?</b>                                | No (Default)                          | Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days. |       | <input type="checkbox"/>            |
| <b>Number of PCs</b>                                 | 326 (Default)                         | Is this the number of personal computers in the K12 School?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| <b>Number of walk-in refrigeration/freezer units</b> | 2 (Default)                           | Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Presence of cooking facilities</b>                | Yes                                   | Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".                                                                                                                                                                                                                                                                              |       | <input type="checkbox"/>            |
| <b>Percent Cooled</b>                                | 100 % (Default)                       | Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Percent Heated</b>                                | 100 %                                 | Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Months</b>                                        | 12(Optional)                          | Is this school in operation for at least 8 months of the year?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | <input type="checkbox"/>            |

|              |     |                                                                                                                                                                                                                                                                                                                |                          |
|--------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| High School? | Yes | Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'. | <input type="checkbox"/> |
|--------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|

# ENERGY STAR® Data Checklist for Commercial Buildings

## Energy Consumption

**Power Generation Plant or Distribution Utility:** Jersey Central Power & Light Co [FirstEnergy Corp]

| Fuel Type: Electricity                                                                                                               |            |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------|
| <b>Meter: Electricity (kWh (thousand Watt-hours))</b><br><b>Space(s):</b> Entire Facility<br><b>Generation Method:</b> Grid Purchase |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (kWh (thousand Watt-hours)) |
| 08/01/2011                                                                                                                           | 08/31/2011 | 172,000.00                             |
| 07/01/2011                                                                                                                           | 07/31/2011 | 188,000.00                             |
| 06/01/2011                                                                                                                           | 06/30/2011 | 193,600.00                             |
| 05/01/2011                                                                                                                           | 05/31/2011 | 203,200.00                             |
| 04/01/2011                                                                                                                           | 04/30/2011 | 169,600.00                             |
| 03/01/2011                                                                                                                           | 03/31/2011 | 186,400.00                             |
| 02/01/2011                                                                                                                           | 02/28/2011 | 159,200.00                             |
| 01/01/2011                                                                                                                           | 01/31/2011 | 220,800.00                             |
| 12/01/2010                                                                                                                           | 12/31/2010 | 173,600.00                             |
| 11/01/2010                                                                                                                           | 11/30/2010 | 192,000.00                             |
| 10/01/2010                                                                                                                           | 10/31/2010 | 188,800.00                             |
| 09/01/2010                                                                                                                           | 09/30/2010 | 206,400.00                             |
| <b>Electricity Consumption (kWh (thousand Watt-hours))</b>                                                                           |            | <b>2,253,600.00</b>                    |
| <b>Electricity Consumption (kBtu (thousand Btu))</b>                                                                                 |            | <b>7,689,283.20</b>                    |
| <b>Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))</b>                                                           |            | <b>7,689,283.20</b>                    |
| Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?                         |            | <input type="checkbox"/>               |
| Fuel Type: Natural Gas                                                                                                               |            |                                        |
| <b>Meter: Natural Gas (therms)</b><br><b>Space(s):</b> Entire Facility                                                               |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (therms)                    |
| 08/01/2011                                                                                                                           | 08/31/2011 | 1,663.00                               |
| 07/01/2011                                                                                                                           | 07/31/2011 | 104.00                                 |
| 06/01/2011                                                                                                                           | 06/30/2011 | 104.00                                 |
| 05/01/2011                                                                                                                           | 05/31/2011 | 1,970.00                               |
| 04/01/2011                                                                                                                           | 04/30/2011 | 4,143.00                               |
| 03/01/2011                                                                                                                           | 03/31/2011 | 13,094.00                              |
| 02/01/2011                                                                                                                           | 02/28/2011 | 20,245.00                              |
| 01/01/2011                                                                                                                           | 01/31/2011 | 23,673.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 25,725.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 21,401.00                              |



|                                                                                                     |            |                          |
|-----------------------------------------------------------------------------------------------------|------------|--------------------------|
| 10/01/2010                                                                                          | 10/31/2010 | 11,098.00                |
| 09/01/2010                                                                                          | 09/30/2010 | 2,594.00                 |
| <b>Natural Gas Consumption (therms)</b>                                                             |            | <b>125,814.00</b>        |
| <b>Natural Gas Consumption (kBtu (thousand Btu))</b>                                                |            | <b>12,581,400.00</b>     |
| <b>Total Natural Gas Consumption (kBtu (thousand Btu))</b>                                          |            | <b>12,581,400.00</b>     |
| <b>Is this the total Natural Gas consumption at this building including all Natural Gas meters?</b> |            | <input type="checkbox"/> |

#### Additional Fuels

Do the fuel consumption totals shown above represent the total energy use of this building?  
Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.

☐

#### On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.

☐

## Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature is required when applying for the ENERGY STAR.

# FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

## Facility

Wall High School  
1630 18th Avenue  
Wall, NJ 07719

## Facility Owner

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

## Primary Contact for this Facility

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

## General Information

| Wall High School                                       |                 |
|--------------------------------------------------------|-----------------|
| Gross Floor Area Excluding Parking: (ft <sup>2</sup> ) | 186,340         |
| Year Built                                             | 1900            |
| For 12-month Evaluation Period Ending Date:            | August 31, 2011 |

## Facility Space Use Summary

| School                                                     |               |
|------------------------------------------------------------|---------------|
| Space Type                                                 | K-12 School   |
| Gross Floor Area (ft <sup>2</sup> )                        | 186,340       |
| Open Weekends? <sup>d</sup>                                | No            |
| Number of PCs <sup>d</sup>                                 | 326           |
| Number of walk-in refrigeration/freezer units <sup>d</sup> | 2             |
| Presence of cooking facilities                             | Yes           |
| Percent Cooled <sup>d</sup>                                | 100           |
| Percent Heated                                             | 100           |
| Months <sup>o</sup>                                        | 12            |
| High School?                                               | Yes           |
| School District <sup>o</sup>                               | Wall Township |

## Energy Performance Comparison

| Performance Metrics                       | Evaluation Periods                  |                                      | Comparisons   |        |                 |
|-------------------------------------------|-------------------------------------|--------------------------------------|---------------|--------|-----------------|
|                                           | Current<br>(Ending Date 08/31/2011) | Baseline<br>(Ending Date 08/31/2011) | Rating of 75  | Target | National Median |
| Energy Performance Rating                 | 15                                  | 15                                   | 75            | N/A    | 50              |
| Energy Intensity                          |                                     |                                      |               |        |                 |
| Site (kBtu/ft <sup>2</sup> )              | 109                                 | 109                                  | 60            | N/A    | 77              |
| Source (kBtu/ft <sup>2</sup> )            | 209                                 | 209                                  | 115           | N/A    | 147             |
| Energy Cost                               |                                     |                                      |               |        |                 |
| \$/year                                   | \$ 405,259.16                       | \$ 405,259.16                        | \$ 223,119.79 | N/A    | \$ 285,335.53   |
| \$/ft <sup>2</sup> /year                  | \$ 2.17                             | \$ 2.17                              | \$ 1.19       | N/A    | \$ 1.53         |
| Greenhouse Gas Emissions                  |                                     |                                      |               |        |                 |
| MtCO <sub>2</sub> e/year                  | 1,758                               | 1,758                                | 968           | N/A    | 1,238           |
| kgCO <sub>2</sub> e/ft <sup>2</sup> /year | 9                                   | 9                                    | 5             | N/A    | 6               |

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.

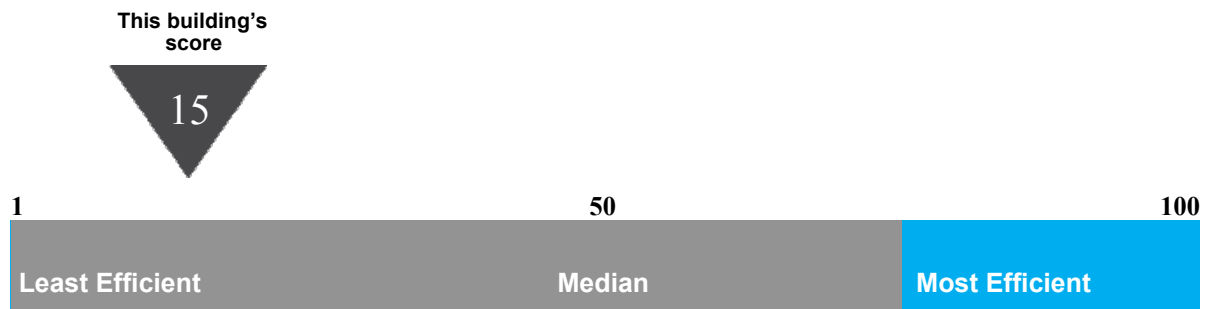
# Statement of Energy Performance

## 2011

Wall High School  
1630 18th Avenue  
Wall, NJ 07719

Portfolio Manager Building ID: 3200977

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit [energystar.gov/benchmark](http://energystar.gov/benchmark).



This building uses 209 kBtu per square foot per year.\*

\*Based on source energy intensity for the 12 month period ending August 2011

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at [energystar.gov](http://energystar.gov)

Date of certification





# STATEMENT OF ENERGY PERFORMANCE

## Old Mill

Building ID: 3201006

For 12-month Period Ending: August 31, 2011<sup>1</sup>

Date SEP becomes ineligible: N/A

Date SEP Generated: August 22, 2012

**Facility**

Old Mill  
2119 Old Mill Road  
Sea Girt, NJ 08750

**Facility Owner**

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

**Primary Contact for this Facility**

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

Year Built: 1900

Gross Floor Area (ft<sup>2</sup>): 56,440Energy Performance Rating<sup>2</sup> (1-100) 3**Site Energy Use Summary<sup>3</sup>**

|                                   |            |
|-----------------------------------|------------|
| Electricity - Grid Purchase(kBtu) | 2,512,324  |
| Natural Gas (kBtu) <sup>4</sup>   | 8,085,400  |
| Total Energy (kBtu)               | 10,597,724 |

**Energy Intensity<sup>4</sup>**

|                                   |     |
|-----------------------------------|-----|
| Site (kBtu/ft <sup>2</sup> /yr)   | 188 |
| Source (kBtu/ft <sup>2</sup> /yr) | 299 |

**Emissions (based on site energy use)**

|                                                     |     |
|-----------------------------------------------------|-----|
| Greenhouse Gas Emissions (MtCO <sub>2</sub> e/year) | 786 |
|-----------------------------------------------------|-----|

**Electric Distribution Utility**

Jersey Central Power &amp; Light Co [FirstEnergy Corp]

**National Median Comparison**

|                                              |             |
|----------------------------------------------|-------------|
| National Median Site EUI                     | 99          |
| National Median Source EUI                   | 158         |
| % Difference from National Median Source EUI | 90%         |
| Building Type                                | K-12 School |

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

**Meets Industry Standards<sup>5</sup> for Indoor Environmental Conditions:**

|                                               |     |
|-----------------------------------------------|-----|
| Ventilation for Acceptable Indoor Air Quality | N/A |
| Acceptable Thermal Environmental Conditions   | N/A |
| Adequate Illumination                         | N/A |

**Certifying Professional**

Matt Goss  
11 British American Blvd  
Latham, NY 12110

**Notes:**

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

## ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

**Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.**

NOTE: You must check each box to indicate that each value is correct, OR include a note.

| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER  | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
|------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| <b>Building Name</b>                                 | Old Mill                               | Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | <input type="checkbox"/>            |
| <b>Type</b>                                          | K-12 School                            | Is this an accurate description of the space in question?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Location</b>                                      | 2119 Old Mill Road, Sea Girt, NJ 08750 | Is this address accurate and complete? Correct weather normalization requires an accurate zip code.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Single Structure</b>                              | Single Facility                        | Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| School (K-12 School)                                 |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                     |
| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER  | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
| <b>Gross Floor Area</b>                              | 56,440 Sq. Ft.                         | Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.                                                                    |       | <input type="checkbox"/>            |
| <b>Open Weekends?</b>                                | No                                     | Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days. |       | <input type="checkbox"/>            |
| <b>Number of PCs</b>                                 | 99 (Default)                           | Is this the number of personal computers in the K12 School?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| <b>Number of walk-in refrigeration/freezer units</b> | 1 (Default)                            | Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Presence of cooking facilities</b>                | Yes (Default)                          | Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".                                                                                                                                                                                                                                                                              |       | <input type="checkbox"/>            |
| <b>Percent Cooled</b>                                | 100 % (Default)                        | Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Percent Heated</b>                                | 100 %                                  | Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Months</b>                                        | 10(Optional)                           | Is this school in operation for at least 8 months of the year?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | <input type="checkbox"/>            |

|              |    |                                                                                                                                                                                                                                                                                                                |                          |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| High School? | No | Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'. | <input type="checkbox"/> |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|

# ENERGY STAR® Data Checklist for Commercial Buildings

## Energy Consumption

**Power Generation Plant or Distribution Utility:** Jersey Central Power & Light Co [FirstEnergy Corp]

| Fuel Type: Electricity                                                                                                               |            |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------|
| <b>Meter: Electricity (kWh (thousand Watt-hours))</b><br><b>Space(s):</b> Entire Facility<br><b>Generation Method:</b> Grid Purchase |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (kWh (thousand Watt-hours)) |
| 08/01/2011                                                                                                                           | 08/31/2011 | 82,560.00                              |
| 07/01/2011                                                                                                                           | 07/31/2011 | 74,880.00                              |
| 06/01/2011                                                                                                                           | 06/30/2011 | 64,800.00                              |
| 05/01/2011                                                                                                                           | 05/31/2011 | 80,160.00                              |
| 04/01/2011                                                                                                                           | 04/30/2011 | 63,360.00                              |
| 03/01/2011                                                                                                                           | 03/31/2011 | 47,200.00                              |
| 02/01/2011                                                                                                                           | 02/28/2011 | 39,840.00                              |
| 01/01/2011                                                                                                                           | 01/31/2011 | 49,760.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 43,360.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 54,080.00                              |
| 10/01/2010                                                                                                                           | 10/31/2010 | 62,560.00                              |
| 09/01/2010                                                                                                                           | 09/30/2010 | 73,760.00                              |
| <b>Electricity Consumption (kWh (thousand Watt-hours))</b>                                                                           |            | <b>736,320.00</b>                      |
| <b>Electricity Consumption (kBtu (thousand Btu))</b>                                                                                 |            | <b>2,512,323.84</b>                    |
| <b>Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))</b>                                                           |            | <b>2,512,323.84</b>                    |
| Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?                         |            | <input type="checkbox"/>               |
| Fuel Type: Natural Gas                                                                                                               |            |                                        |
| <b>Meter: Natural Gas (therms)</b><br><b>Space(s):</b> Entire Facility                                                               |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (therms)                    |
| 08/01/2011                                                                                                                           | 08/31/2011 | 2,175.00                               |
| 07/01/2011                                                                                                                           | 07/31/2011 | 2,595.00                               |
| 06/01/2011                                                                                                                           | 06/30/2011 | 3,637.00                               |
| 05/01/2011                                                                                                                           | 05/31/2011 | 4,431.00                               |
| 04/01/2011                                                                                                                           | 04/30/2011 | 6,195.00                               |
| 03/01/2011                                                                                                                           | 03/31/2011 | 7,782.00                               |
| 02/01/2011                                                                                                                           | 02/28/2011 | 9,805.00                               |
| 01/01/2011                                                                                                                           | 01/31/2011 | 11,566.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 13,411.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 8,124.00                               |

|                                                                                                     |            |                          |
|-----------------------------------------------------------------------------------------------------|------------|--------------------------|
| 10/01/2010                                                                                          | 10/31/2010 | 6,811.00                 |
| 09/01/2010                                                                                          | 09/30/2010 | 4,322.00                 |
| <b>Natural Gas Consumption (therms)</b>                                                             |            | <b>80,854.00</b>         |
| <b>Natural Gas Consumption (kBtu (thousand Btu))</b>                                                |            | <b>8,085,400.00</b>      |
| <b>Total Natural Gas Consumption (kBtu (thousand Btu))</b>                                          |            | <b>8,085,400.00</b>      |
| <b>Is this the total Natural Gas consumption at this building including all Natural Gas meters?</b> |            | <input type="checkbox"/> |

#### Additional Fuels

Do the fuel consumption totals shown above represent the total energy use of this building?  
Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.

☐

#### On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.

☐

## Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature is required when applying for the ENERGY STAR.



# FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

**Facility**

Old Mill  
2119 Old Mill Road  
Sea Girt, NJ 08750

**Facility Owner**

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

**Primary Contact for this Facility**

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

## General Information

| Old Mill                                               |                 |
|--------------------------------------------------------|-----------------|
| Gross Floor Area Excluding Parking: (ft <sup>2</sup> ) | 56,440          |
| Year Built                                             | 1900            |
| For 12-month Evaluation Period Ending Date:            | August 31, 2011 |

## Facility Space Use Summary

| School                                                     |               |
|------------------------------------------------------------|---------------|
| Space Type                                                 | K-12 School   |
| Gross Floor Area (ft <sup>2</sup> )                        | 56,440        |
| Open Weekends?                                             | No            |
| Number of PCs <sup>d</sup>                                 | 99            |
| Number of walk-in refrigeration/freezer units <sup>d</sup> | 1             |
| Presence of cooking facilities <sup>d</sup>                | Yes           |
| Percent Cooled <sup>d</sup>                                | 100           |
| Percent Heated                                             | 100           |
| Months <sup>o</sup>                                        | 10            |
| High School?                                               | No            |
| School District <sup>o</sup>                               | Wall Township |

## Energy Performance Comparison

| Performance Metrics                       | Evaluation Periods                  |                                      | Comparisons  |        |                 |
|-------------------------------------------|-------------------------------------|--------------------------------------|--------------|--------|-----------------|
|                                           | Current<br>(Ending Date 08/31/2011) | Baseline<br>(Ending Date 08/31/2011) | Rating of 75 | Target | National Median |
| Energy Performance Rating                 | 3                                   | 3                                    | 75           | N/A    | 50              |
| Energy Intensity                          |                                     |                                      |              |        |                 |
| Site (kBtu/ft <sup>2</sup> )              | 188                                 | 188                                  | 77           | N/A    | 99              |
| Source (kBtu/ft <sup>2</sup> )            | 299                                 | 299                                  | 123          | N/A    | 158             |
| Energy Cost                               |                                     |                                      |              |        |                 |
| \$/year                                   | \$ 148,132.62                       | \$ 148,132.62                        | \$ 61,100.66 | N/A    | \$ 78,133.11    |
| \$/ft <sup>2</sup> /year                  | \$ 2.62                             | \$ 2.62                              | \$ 1.08      | N/A    | \$ 1.38         |
| Greenhouse Gas Emissions                  |                                     |                                      |              |        |                 |
| MtCO <sub>2</sub> e/year                  | 786                                 | 786                                  | 324          | N/A    | 415             |
| kgCO <sub>2</sub> e/ft <sup>2</sup> /year | 14                                  | 14                                   | 6            | N/A    | 7               |

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.

# Statement of Energy Performance

## 2011

Old Mill  
2119 Old Mill Road  
Sea Girt, NJ 08750

Portfolio Manager Building ID: 3201006

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit [energystar.gov/benchmark](http://energystar.gov/benchmark).

This building's  
score

3

1

50

100

Least Efficient

Median

Most Efficient

This building uses 299 kBtu per square foot per year.\*

\*Based on source energy intensity for the 12 month period ending August 2011

Buildings with a score of  
75 or higher may qualify  
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S.  
Environmental Protection Agency's measurement standards, found at [energystar.gov](http://energystar.gov)

Date of certification





# STATEMENT OF ENERGY PERFORMANCE

## Central Elementary

Building ID: 3200972

For 12-month Period Ending: August 31, 2011<sup>1</sup>

Date SEP becomes ineligible: N/A

Date SEP Generated: August 22, 2012

**Facility**

Central Elementary  
2007 Allenwood Road  
Wall, NJ 07719

**Facility Owner**

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

**Primary Contact for this Facility**

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

Year Built: 1900

Gross Floor Area (ft<sup>2</sup>): 56,110Energy Performance Rating<sup>2</sup> (1-100) 22**Site Energy Use Summary<sup>3</sup>**

|                                   |           |
|-----------------------------------|-----------|
| Electricity - Grid Purchase(kBtu) | 1,677,066 |
| Natural Gas (kBtu) <sup>4</sup>   | 5,632,900 |
| Total Energy (kBtu)               | 7,309,966 |

**Energy Intensity<sup>4</sup>**

|                                   |     |
|-----------------------------------|-----|
| Site (kBtu/ft <sup>2</sup> /yr)   | 130 |
| Source (kBtu/ft <sup>2</sup> /yr) | 205 |

**Emissions (based on site energy use)**

|                                                     |     |
|-----------------------------------------------------|-----|
| Greenhouse Gas Emissions (MtCO <sub>2</sub> e/year) | 537 |
|-----------------------------------------------------|-----|

**Electric Distribution Utility**

Jersey Central Power &amp; Light Co [FirstEnergy Corp]

**National Median Comparison**

|                                              |             |
|----------------------------------------------|-------------|
| National Median Site EUI                     | 101         |
| National Median Source EUI                   | 158         |
| % Difference from National Median Source EUI | 30%         |
| Building Type                                | K-12 School |

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

**Meets Industry Standards<sup>5</sup> for Indoor Environmental Conditions:**

|                                               |     |
|-----------------------------------------------|-----|
| Ventilation for Acceptable Indoor Air Quality | N/A |
| Acceptable Thermal Environmental Conditions   | N/A |
| Adequate Illumination                         | N/A |

**Certifying Professional**

Matt Goss  
11 British American Blvd  
Latham, NY 12110

**Notes:**

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

## ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

**Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.**

NOTE: You must check each box to indicate that each value is correct, OR include a note.

| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
|------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| <b>Building Name</b>                                 | Central Elementary                    | Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | <input type="checkbox"/>            |
| <b>Type</b>                                          | K-12 School                           | Is this an accurate description of the space in question?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Location</b>                                      | 2007 Allenwood Road, Wall, NJ 07719   | Is this address accurate and complete? Correct weather normalization requires an accurate zip code.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Single Structure</b>                              | Single Facility                       | Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| School (K-12 School)                                 |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                     |
| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
| <b>Gross Floor Area</b>                              | 56,110 Sq. Ft.                        | Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.                                                                    |       | <input type="checkbox"/>            |
| <b>Open Weekends?</b>                                | No                                    | Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days. |       | <input type="checkbox"/>            |
| <b>Number of PCs</b>                                 | 98 (Default)                          | Is this the number of personal computers in the K12 School?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| <b>Number of walk-in refrigeration/freezer units</b> | 1 (Default)                           | Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Presence of cooking facilities</b>                | Yes (Default)                         | Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".                                                                                                                                                                                                                                                                              |       | <input type="checkbox"/>            |
| <b>Percent Cooled</b>                                | 100 % (Default)                       | Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Percent Heated</b>                                | 100 %                                 | Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Months</b>                                        | 10(Optional)                          | Is this school in operation for at least 8 months of the year?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | <input type="checkbox"/>            |

|              |    |                                                                                                                                                                                                                                                                                                                |                          |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| High School? | No | Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'. | <input type="checkbox"/> |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|

# ENERGY STAR® Data Checklist for Commercial Buildings

## Energy Consumption

**Power Generation Plant or Distribution Utility:** Jersey Central Power & Light Co [FirstEnergy Corp]

| Fuel Type: Electricity                                                                                                               |            |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------|
| <b>Meter: Electricity (kWh (thousand Watt-hours))</b><br><b>Space(s):</b> Entire Facility<br><b>Generation Method:</b> Grid Purchase |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (kWh (thousand Watt-hours)) |
| 08/01/2011                                                                                                                           | 08/31/2011 | 33,280.00                              |
| 07/01/2011                                                                                                                           | 07/31/2011 | 41,920.00                              |
| 06/01/2011                                                                                                                           | 06/30/2011 | 40,320.00                              |
| 05/01/2011                                                                                                                           | 05/31/2011 | 36,000.00                              |
| 04/01/2011                                                                                                                           | 04/30/2011 | 37,920.00                              |
| 03/01/2011                                                                                                                           | 03/31/2011 | 44,480.00                              |
| 02/01/2011                                                                                                                           | 02/28/2011 | 46,880.00                              |
| 01/01/2011                                                                                                                           | 01/31/2011 | 50,880.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 48,000.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 45,600.00                              |
| 10/01/2010                                                                                                                           | 10/31/2010 | 32,640.00                              |
| 09/01/2010                                                                                                                           | 09/30/2010 | 33,600.00                              |
| <b>Electricity Consumption (kWh (thousand Watt-hours))</b>                                                                           |            | <b>491,520.00</b>                      |
| <b>Electricity Consumption (kBtu (thousand Btu))</b>                                                                                 |            | <b>1,677,066.24</b>                    |
| <b>Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))</b>                                                           |            | <b>1,677,066.24</b>                    |
| Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?                         |            | <input type="checkbox"/>               |
| Fuel Type: Natural Gas                                                                                                               |            |                                        |
| <b>Meter: Natural Gas (therms)</b><br><b>Space(s):</b> Entire Facility                                                               |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (therms)                    |
| 08/01/2011                                                                                                                           | 08/31/2011 | 0.00                                   |
| 07/01/2011                                                                                                                           | 07/31/2011 | 0.00                                   |
| 06/01/2011                                                                                                                           | 06/30/2011 | 0.00                                   |
| 05/01/2011                                                                                                                           | 05/31/2011 | 0.00                                   |
| 04/01/2011                                                                                                                           | 04/30/2011 | 792.00                                 |
| 03/01/2011                                                                                                                           | 03/31/2011 | 6,662.00                               |
| 02/01/2011                                                                                                                           | 02/28/2011 | 9,180.00                               |
| 01/01/2011                                                                                                                           | 01/31/2011 | 12,132.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 12,612.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 14,917.00                              |

|                                                                                                     |            |                          |
|-----------------------------------------------------------------------------------------------------|------------|--------------------------|
| 10/01/2010                                                                                          | 10/31/2010 | 0.00                     |
| 09/01/2010                                                                                          | 09/30/2010 | 34.00                    |
| <b>Natural Gas Consumption (therms)</b>                                                             |            | <b>56,329.00</b>         |
| <b>Natural Gas Consumption (kBtu (thousand Btu))</b>                                                |            | <b>5,632,900.00</b>      |
| <b>Total Natural Gas Consumption (kBtu (thousand Btu))</b>                                          |            | <b>5,632,900.00</b>      |
| <b>Is this the total Natural Gas consumption at this building including all Natural Gas meters?</b> |            | <input type="checkbox"/> |

#### Additional Fuels

Do the fuel consumption totals shown above represent the total energy use of this building?  
Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.

☐

#### On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.

☐

## Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature is required when applying for the ENERGY STAR.

# FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

## Facility

Central Elementary  
2007 Allenwood Road  
Wall, NJ 07719

## Facility Owner

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

## Primary Contact for this Facility

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

## General Information

| Central Elementary                                     |                 |
|--------------------------------------------------------|-----------------|
| Gross Floor Area Excluding Parking: (ft <sup>2</sup> ) | 56,110          |
| Year Built                                             | 1900            |
| For 12-month Evaluation Period Ending Date:            | August 31, 2011 |

## Facility Space Use Summary

| School                                                     |               |
|------------------------------------------------------------|---------------|
| Space Type                                                 | K-12 School   |
| Gross Floor Area (ft <sup>2</sup> )                        | 56,110        |
| Open Weekends?                                             | No            |
| Number of PCs <sup>d</sup>                                 | 98            |
| Number of walk-in refrigeration/freezer units <sup>d</sup> | 1             |
| Presence of cooking facilities <sup>d</sup>                | Yes           |
| Percent Cooled <sup>d</sup>                                | 100           |
| Percent Heated                                             | 100           |
| Months <sup>o</sup>                                        | 10            |
| High School?                                               | No            |
| School District <sup>o</sup>                               | Wall Township |

## Energy Performance Comparison

| Performance Metrics                       | Evaluation Periods                  |                                      | Comparisons  |        |                 |
|-------------------------------------------|-------------------------------------|--------------------------------------|--------------|--------|-----------------|
|                                           | Current<br>(Ending Date 08/31/2011) | Baseline<br>(Ending Date 08/31/2011) | Rating of 75 | Target | National Median |
| Energy Performance Rating                 | 22                                  | 22                                   | 75           | N/A    | 50              |
| Energy Intensity                          |                                     |                                      |              |        |                 |
| Site (kBtu/ft <sup>2</sup> )              | 130                                 | 130                                  | 79           | N/A    | 101             |
| Source (kBtu/ft <sup>2</sup> )            | 205                                 | 205                                  | 124          | N/A    | 158             |
| Energy Cost                               |                                     |                                      |              |        |                 |
| \$/year                                   | \$ 107,468.30                       | \$ 107,468.30                        | \$ 64,853.84 | N/A    | \$ 82,935.70    |
| \$/ft <sup>2</sup> /year                  | \$ 1.92                             | \$ 1.92                              | \$ 1.16      | N/A    | \$ 1.48         |
| Greenhouse Gas Emissions                  |                                     |                                      |              |        |                 |
| MtCO <sub>2</sub> e/year                  | 537                                 | 537                                  | 324          | N/A    | 414             |
| kgCO <sub>2</sub> e/ft <sup>2</sup> /year | 10                                  | 10                                   | 6            | N/A    | 8               |

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.



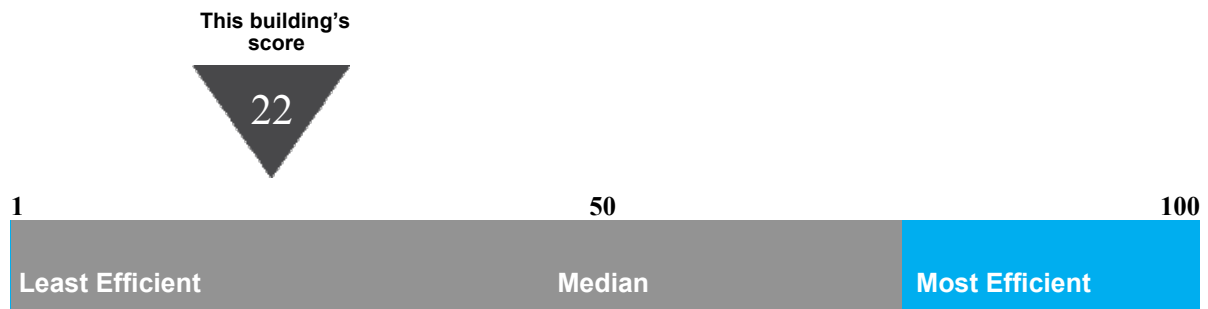
# Statement of Energy Performance

## 2011

Central Elementary  
2007 Allenwood Road  
Wall, NJ 07719

Portfolio Manager Building ID: 3200972

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit [energystar.gov/benchmark](http://energystar.gov/benchmark).



This building uses 205 kBtu per square foot per year.\*

\*Based on source energy intensity for the 12 month period ending August 2011

Buildings with a score of  
75 or higher may qualify  
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at [energystar.gov](http://energystar.gov)

Date of certification





# STATEMENT OF ENERGY PERFORMANCE

## Allenwood Elementary School

Building ID: 3200965

For 12-month Period Ending: August 31, 2011<sup>1</sup>

Date SEP becomes ineligible: N/A

Date SEP Generated: August 22, 2012

**Facility**

Allenwood Elementary School  
3301 Allenwood-Lakewood Road  
Allenwood, NJ 08720

**Facility Owner**

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

**Primary Contact for this Facility**

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

Year Built: 1900

Gross Floor Area (ft<sup>2</sup>): 49,920Energy Performance Rating<sup>2</sup> (1-100) 58**Site Energy Use Summary<sup>3</sup>**

|                                   |           |
|-----------------------------------|-----------|
| Electricity - Grid Purchase(kBtu) | 1,390,629 |
| Natural Gas (kBtu) <sup>4</sup>   | 2,609,600 |
| Total Energy (kBtu)               | 4,000,229 |

**Energy Intensity<sup>4</sup>**

|                                   |     |
|-----------------------------------|-----|
| Site (kBtu/ft <sup>2</sup> /yr)   | 80  |
| Source (kBtu/ft <sup>2</sup> /yr) | 148 |

**Emissions (based on site energy use)**

|                                                     |     |
|-----------------------------------------------------|-----|
| Greenhouse Gas Emissions (MtCO <sub>2</sub> e/year) | 336 |
|-----------------------------------------------------|-----|

**Electric Distribution Utility**

Jersey Central Power &amp; Light Co [FirstEnergy Corp]

**National Median Comparison**

|                                              |             |
|----------------------------------------------|-------------|
| National Median Site EUI                     | 87          |
| National Median Source EUI                   | 160         |
| % Difference from National Median Source EUI | -7%         |
| Building Type                                | K-12 School |

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

**Meets Industry Standards<sup>5</sup> for Indoor Environmental Conditions:**

|                                               |     |
|-----------------------------------------------|-----|
| Ventilation for Acceptable Indoor Air Quality | N/A |
| Acceptable Thermal Environmental Conditions   | N/A |
| Adequate Illumination                         | N/A |

**Certifying Professional**

Matt Goss  
11 British American Blvd  
Latham, NY 12110

**Notes:**

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

## ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

**Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.**

NOTE: You must check each box to indicate that each value is correct, OR include a note.

| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER             | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
|------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| <b>Building Name</b>                                 | Allenwood Elementary School                       | Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | <input type="checkbox"/>            |
| <b>Type</b>                                          | K-12 School                                       | Is this an accurate description of the space in question?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Location</b>                                      | 3301 Allenwood-Lakewood Road, Allenwood, NJ 08720 | Is this address accurate and complete? Correct weather normalization requires an accurate zip code.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Single Structure</b>                              | Single Facility                                   | Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| School (K-12 School)                                 |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                     |
| CRITERION                                            | VALUE AS ENTERED IN PORTFOLIO MANAGER             | VERIFICATION QUESTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NOTES | <input checked="" type="checkbox"/> |
| <b>Gross Floor Area</b>                              | 49,920 Sq. Ft.                                    | Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.                                                                    |       | <input type="checkbox"/>            |
| <b>Open Weekends?</b>                                | No                                                | Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days. |       | <input type="checkbox"/>            |
| <b>Number of PCs</b>                                 | 87 (Default)                                      | Is this the number of personal computers in the K12 School?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | <input type="checkbox"/>            |
| <b>Number of walk-in refrigeration/freezer units</b> | 0 (Default)                                       | Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.                                                                                                                                                                                                                                                                                                                                                                                                               |       | <input type="checkbox"/>            |
| <b>Presence of cooking facilities</b>                | Yes (Default)                                     | Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".                                                                                                                                                                                                                                                                              |       | <input type="checkbox"/>            |
| <b>Percent Cooled</b>                                | 100 % (Default)                                   | Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Percent Heated</b>                                | 100 %                                             | Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | <input type="checkbox"/>            |
| <b>Months</b>                                        | 10(Optional)                                      | Is this school in operation for at least 8 months of the year?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | <input type="checkbox"/>            |

|              |    |                                                                                                                                                                                                                                                                                                                |                          |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| High School? | No | Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'. | <input type="checkbox"/> |
|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|

# ENERGY STAR® Data Checklist for Commercial Buildings

## Energy Consumption

**Power Generation Plant or Distribution Utility:** Jersey Central Power & Light Co [FirstEnergy Corp]

| Fuel Type: Electricity                                                                                                               |            |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------|
| <b>Meter: Electricity (kWh (thousand Watt-hours))</b><br><b>Space(s):</b> Entire Facility<br><b>Generation Method:</b> Grid Purchase |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (kWh (thousand Watt-hours)) |
| 08/01/2011                                                                                                                           | 08/31/2011 | 31,029.00                              |
| 07/01/2011                                                                                                                           | 07/31/2011 | 27,911.00                              |
| 06/01/2011                                                                                                                           | 06/30/2011 | 36,629.00                              |
| 05/01/2011                                                                                                                           | 05/31/2011 | 33,749.00                              |
| 04/01/2011                                                                                                                           | 04/30/2011 | 32,949.00                              |
| 03/01/2011                                                                                                                           | 03/31/2011 | 37,749.00                              |
| 02/01/2011                                                                                                                           | 02/28/2011 | 29,269.00                              |
| 01/01/2011                                                                                                                           | 01/31/2011 | 41,589.00                              |
| 12/01/2010                                                                                                                           | 12/31/2010 | 36,789.00                              |
| 11/01/2010                                                                                                                           | 11/30/2010 | 34,809.00                              |
| 10/01/2010                                                                                                                           | 10/31/2010 | 34,069.00                              |
| 09/01/2010                                                                                                                           | 09/30/2010 | 31,029.00                              |
| <b>Electricity Consumption (kWh (thousand Watt-hours))</b>                                                                           |            | <b>407,570.00</b>                      |
| <b>Electricity Consumption (kBtu (thousand Btu))</b>                                                                                 |            | <b>1,390,628.84</b>                    |
| <b>Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))</b>                                                           |            | <b>1,390,628.84</b>                    |
| Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?                         |            | <input type="checkbox"/>               |
| Fuel Type: Natural Gas                                                                                                               |            |                                        |
| <b>Meter: Natural Gas (therms)</b><br><b>Space(s):</b> Entire Facility                                                               |            |                                        |
| Start Date                                                                                                                           | End Date   | Energy Use (therms)                    |
| 08/01/2011                                                                                                                           | 08/31/2011 | 0.00                                   |
| 07/01/2011                                                                                                                           | 07/31/2011 | 0.00                                   |
| 06/01/2011                                                                                                                           | 06/30/2011 | 0.00                                   |
| 05/01/2011                                                                                                                           | 05/31/2011 | 0.00                                   |
| 04/01/2011                                                                                                                           | 04/30/2011 | 0.00                                   |
| 03/01/2011                                                                                                                           | 03/31/2011 | 1,064.00                               |
| 02/01/2011                                                                                                                           | 02/28/2011 | 3,930.00                               |
| 01/01/2011                                                                                                                           | 01/31/2011 | 6,599.00                               |
| 12/01/2010                                                                                                                           | 12/31/2010 | 7,655.00                               |
| 11/01/2010                                                                                                                           | 11/30/2010 | 5,357.00                               |

|                                                                                                     |            |                          |
|-----------------------------------------------------------------------------------------------------|------------|--------------------------|
| 10/01/2010                                                                                          | 10/31/2010 | 1,491.00                 |
| 09/01/2010                                                                                          | 09/30/2010 | 0.00                     |
| <b>Natural Gas Consumption (therms)</b>                                                             |            | <b>26,096.00</b>         |
| <b>Natural Gas Consumption (kBtu (thousand Btu))</b>                                                |            | <b>2,609,600.00</b>      |
| <b>Total Natural Gas Consumption (kBtu (thousand Btu))</b>                                          |            | <b>2,609,600.00</b>      |
| <b>Is this the total Natural Gas consumption at this building including all Natural Gas meters?</b> |            | <input type="checkbox"/> |

#### Additional Fuels

Do the fuel consumption totals shown above represent the total energy use of this building?  
Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.

☐

#### On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.

☐

## Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature is required when applying for the ENERGY STAR.

# FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

## Facility

Allenwood Elementary School  
3301 Allenwood-Lakewood Road  
Allenwood, NJ 08720

## Facility Owner

Wall Township Public School  
1620 18th Avenue  
Wall, NJ 07719

## Primary Contact for this Facility

Dawn Choma  
1620 18th Avenue  
Wall, NJ 07719

## General Information

| Allenwood Elementary School                            |                 |
|--------------------------------------------------------|-----------------|
| Gross Floor Area Excluding Parking: (ft <sup>2</sup> ) | 49,920          |
| Year Built                                             | 1900            |
| For 12-month Evaluation Period Ending Date:            | August 31, 2011 |

## Facility Space Use Summary

| School                                                     |               |
|------------------------------------------------------------|---------------|
| Space Type                                                 | K-12 School   |
| Gross Floor Area (ft <sup>2</sup> )                        | 49,920        |
| Open Weekends?                                             | No            |
| Number of PCs <sup>d</sup>                                 | 87            |
| Number of walk-in refrigeration/freezer units <sup>d</sup> | 0             |
| Presence of cooking facilities <sup>d</sup>                | Yes           |
| Percent Cooled <sup>d</sup>                                | 100           |
| Percent Heated                                             | 100           |
| Months <sup>o</sup>                                        | 10            |
| High School?                                               | No            |
| School District <sup>o</sup>                               | Wall Township |

## Energy Performance Comparison

| Performance Metrics                       | Evaluation Periods                  |                                      | Comparisons  |        |                 |
|-------------------------------------------|-------------------------------------|--------------------------------------|--------------|--------|-----------------|
|                                           | Current<br>(Ending Date 08/31/2011) | Baseline<br>(Ending Date 08/31/2011) | Rating of 75 | Target | National Median |
| Energy Performance Rating                 | 58                                  | 58                                   | 75           | N/A    | 50              |
| Energy Intensity                          |                                     |                                      |              |        |                 |
| Site (kBtu/ft <sup>2</sup> )              | 80                                  | 80                                   | 68           | N/A    | 87              |
| Source (kBtu/ft <sup>2</sup> )            | 148                                 | 148                                  | 125          | N/A    | 160             |
| Energy Cost                               |                                     |                                      |              |        |                 |
| \$/year                                   | \$ 78,458.39                        | \$ 78,458.39                         | \$ 66,356.23 | N/A    | \$ 84,861.96    |
| \$/ft <sup>2</sup> /year                  | \$ 1.57                             | \$ 1.57                              | \$ 1.33      | N/A    | \$ 1.70         |
| Greenhouse Gas Emissions                  |                                     |                                      |              |        |                 |
| MtCO <sub>2</sub> e/year                  | 336                                 | 336                                  | 284          | N/A    | 363             |
| kgCO <sub>2</sub> e/ft <sup>2</sup> /year | 7                                   | 7                                    | 6            | N/A    | 8               |

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.

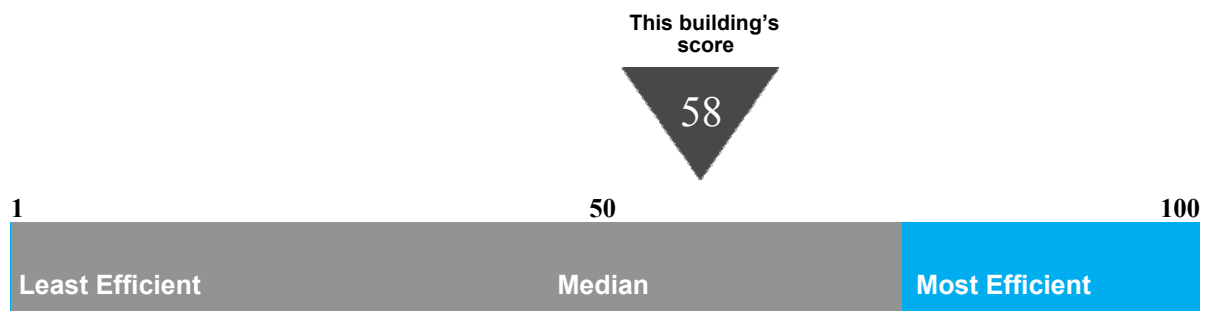
# Statement of Energy Performance

## 2011

Allenwood Elementary School  
3301 Allenwood-Lakewood Road  
Allenwood, NJ 08720

Portfolio Manager Building ID: 3200965

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit [energystar.gov/benchmark](http://energystar.gov/benchmark).



This building uses 148 kBtu per square foot per year.\*

\*Based on source energy intensity for the 12 month period ending August 2011

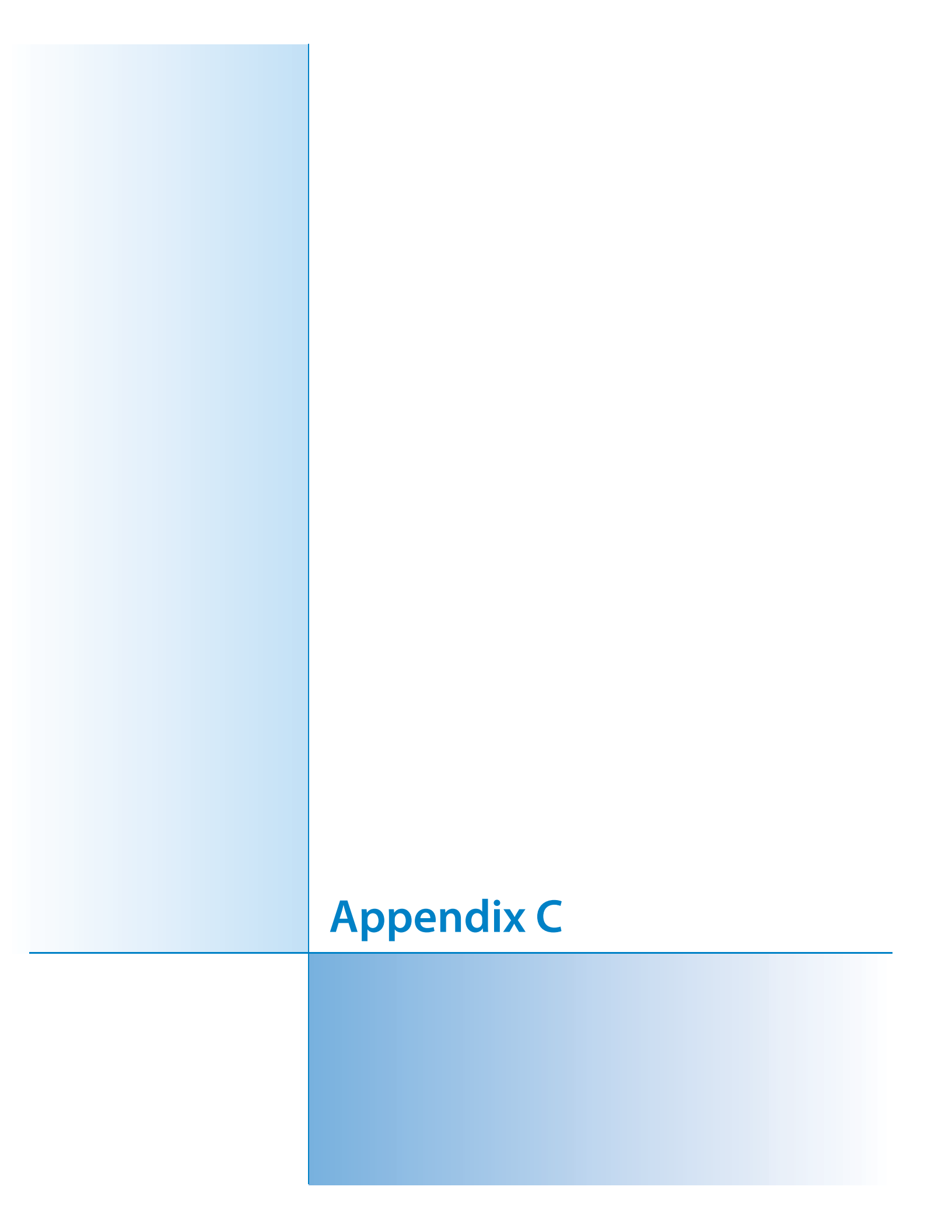
Buildings with a score of  
75 or higher may qualify  
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S.  
Environmental Protection Agency's measurement standards, found at [energystar.gov](http://energystar.gov)

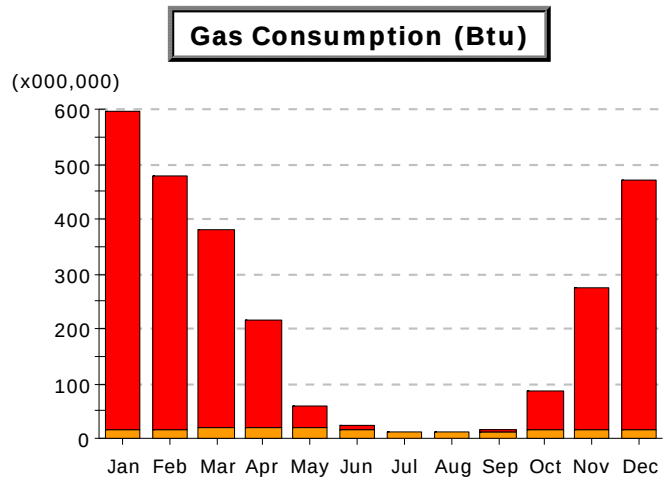
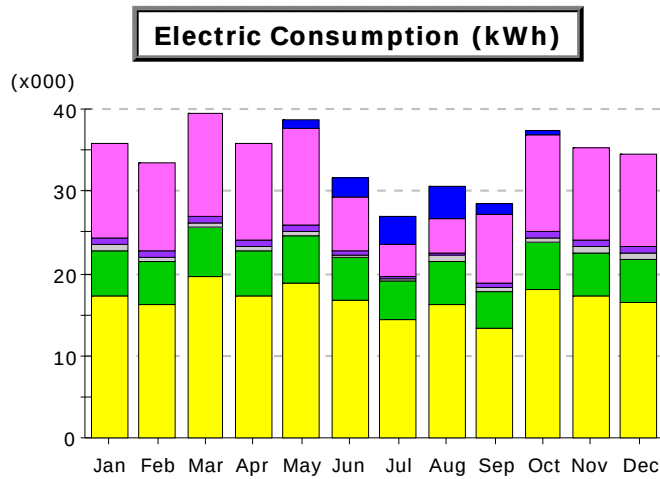
Date of certification





The graphic features a large, light blue rectangle on the left side of the page. A thin blue vertical line separates this rectangle from the rest of the page. A thin blue horizontal line extends from the vertical line across the page. The text "Appendix C" is positioned at the intersection of these lines, in a bold blue font. A darker blue rectangle is located at the bottom right of the page, partially overlapping the horizontal line.

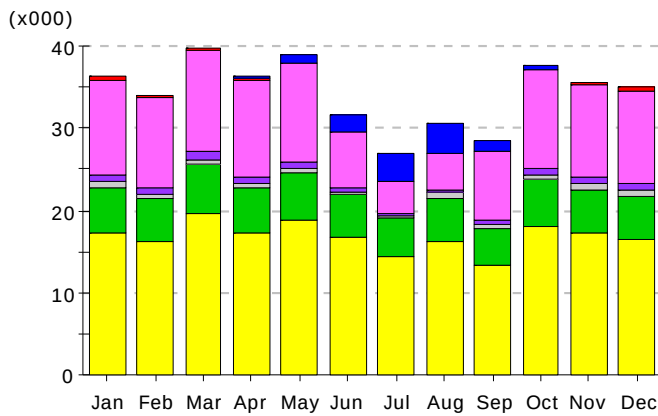
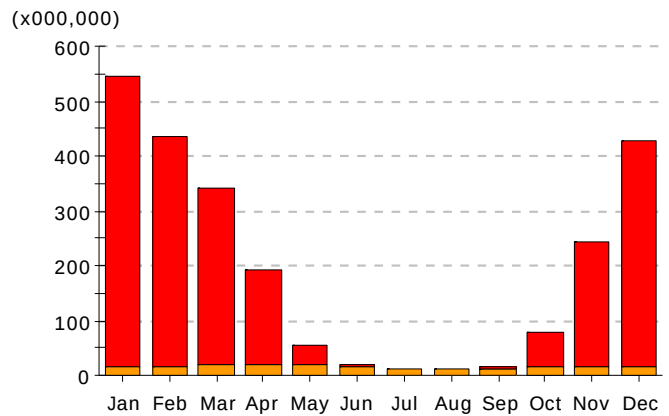
## Appendix C

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | -            | -            | 0.01         | 0.10         | 1.11         | 2.15         | 3.37         | 3.89         | 1.25         | 0.35         | 0.00         | -            | 12.24         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 11.61        | 10.89        | 12.30        | 11.90        | 11.91        | 6.75         | 3.89         | 4.41         | 8.38         | 11.90        | 11.22        | 11.29        | 116.45        |
| Pumps & Aux.  | 0.79         | 0.71         | 0.78         | 0.73         | 0.71         | 0.39         | 0.21         | 0.24         | 0.49         | 0.71         | 0.74         | 0.79         | 7.29          |
| Ext. Usage    | 0.70         | 0.54         | 0.59         | 0.58         | 0.41         | 0.40         | 0.41         | 0.67         | 0.65         | 0.67         | 0.68         | 0.70         | 6.99          |
| Misc. Equip.  | 5.43         | 5.13         | 6.14         | 5.41         | 5.91         | 5.23         | 4.57         | 5.15         | 4.22         | 5.67         | 5.41         | 5.20         | 63.47         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 17.27        | 16.30        | 19.53        | 17.21        | 18.78        | 16.60        | 14.48        | 16.32        | 13.43        | 18.03        | 17.19        | 16.51        | 201.65        |
| <b>Total</b>  | <b>35.80</b> | <b>33.57</b> | <b>39.36</b> | <b>35.94</b> | <b>38.82</b> | <b>31.52</b> | <b>26.93</b> | <b>30.68</b> | <b>28.42</b> | <b>37.34</b> | <b>35.23</b> | <b>34.48</b> | <b>408.09</b> |

**Gas Consumption (Btu x000,000)**

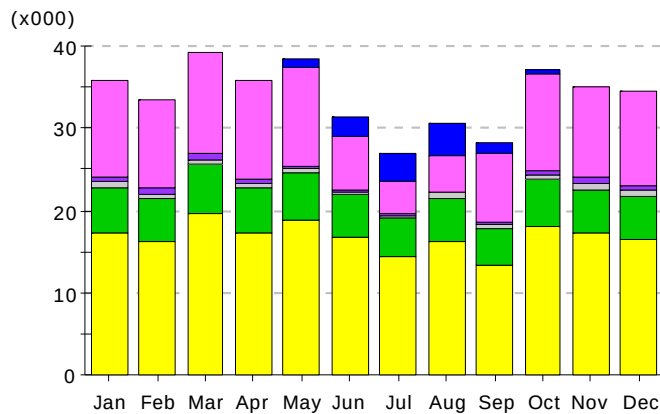
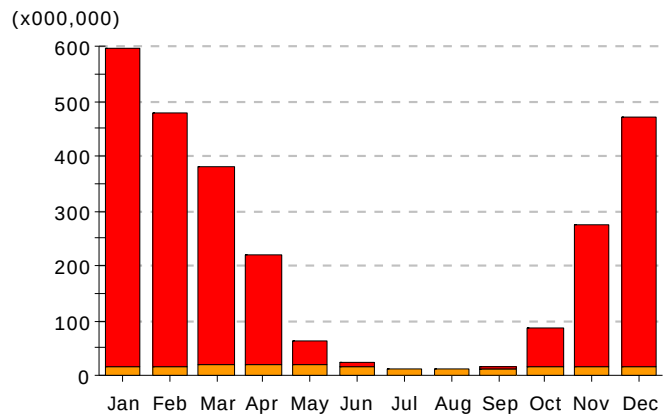
|               | Jan          | Feb          | Mar          | Apr          | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Space Heat    | 577.8        | 462.3        | 360.1        | 199.6        | 42.4        | 7.5         | 0.0         | -           | 5.1         | 72.2        | 259.0        | 456.2        | 2,442.2        |
| HP Supp.      | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Hot Water     | 17.6         | 17.2         | 20.6         | 17.9         | 18.1        | 14.4        | 11.5        | 12.3        | 10.6        | 14.8        | 15.2         | 15.8         | 186.1          |
| Vent. Fans    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Misc. Equip.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Task Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| <b>Total</b>  | <b>595.4</b> | <b>479.4</b> | <b>380.8</b> | <b>217.4</b> | <b>60.5</b> | <b>22.0</b> | <b>11.5</b> | <b>12.3</b> | <b>15.8</b> | <b>87.0</b> | <b>274.3</b> | <b>472.0</b> | <b>2,628.3</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | -            | -            | 0.01         | 0.10         | 1.11         | 2.15         | 3.37         | 3.89         | 1.25         | 0.35         | 0.00         | -            | 12.24         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 0.47         | 0.41         | 0.39         | 0.27         | 0.08         | 0.02         | -            | -            | 0.01         | 0.12         | 0.33         | 0.43         | 2.52          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 11.61        | 10.89        | 12.30        | 11.90        | 11.91        | 6.75         | 3.89         | 4.41         | 8.38         | 11.90        | 11.22        | 11.29        | 116.45        |
| Pumps & Aux.  | 0.89         | 0.80         | 0.88         | 0.83         | 0.80         | 0.44         | 0.24         | 0.28         | 0.55         | 0.80         | 0.83         | 0.88         | 8.23          |
| Ext. Usage    | 0.70         | 0.54         | 0.59         | 0.58         | 0.41         | 0.40         | 0.41         | 0.67         | 0.65         | 0.67         | 0.68         | 0.70         | 6.99          |
| Misc. Equip.  | 5.43         | 5.13         | 6.14         | 5.41         | 5.91         | 5.23         | 4.57         | 5.15         | 4.22         | 5.67         | 5.41         | 5.20         | 63.47         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 17.27        | 16.30        | 19.53        | 17.21        | 18.78        | 16.60        | 14.48        | 16.32        | 13.43        | 18.03        | 17.19        | 16.51        | 201.65        |
| <b>Total</b>  | <b>36.37</b> | <b>34.07</b> | <b>39.85</b> | <b>36.30</b> | <b>39.00</b> | <b>31.60</b> | <b>26.95</b> | <b>30.71</b> | <b>28.49</b> | <b>37.55</b> | <b>35.65</b> | <b>35.01</b> | <b>411.55</b> |

**Gas Consumption (Btu x000,000)**

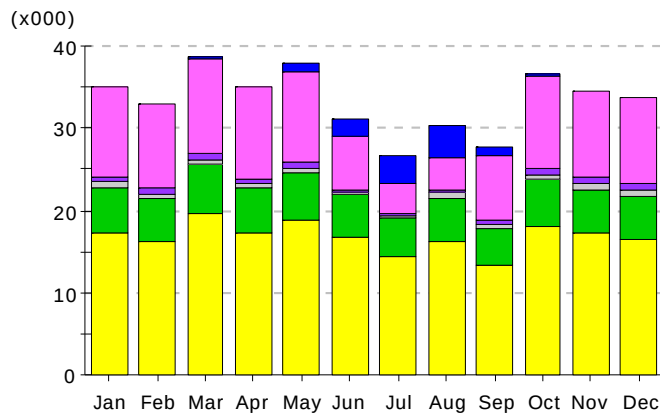
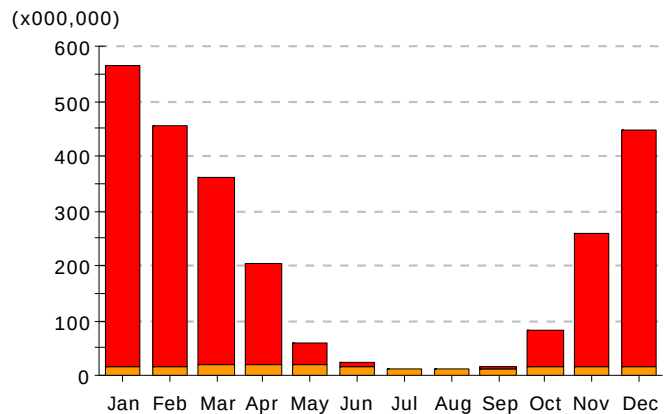
|               | Jan          | Feb          | Mar          | Apr          | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Space Heat    | 526.8        | 418.2        | 321.9        | 176.0        | 36.7        | 6.4         | 0.0         | -           | 4.1         | 62.7        | 229.2        | 409.9        | 2,191.9        |
| HP Supp.      | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Hot Water     | 17.6         | 17.2         | 20.6         | 17.9         | 18.1        | 14.4        | 11.5        | 12.3        | 10.6        | 14.8        | 15.2         | 15.8         | 186.1          |
| Vent. Fans    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Misc. Equip.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Task Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| <b>Total</b>  | <b>544.3</b> | <b>435.4</b> | <b>342.5</b> | <b>193.9</b> | <b>54.8</b> | <b>20.8</b> | <b>11.5</b> | <b>12.3</b> | <b>14.8</b> | <b>77.5</b> | <b>244.5</b> | <b>425.7</b> | <b>2,378.0</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | -            | -            | 0.01         | 0.10         | 1.11         | 2.15         | 3.37         | 3.89         | 1.25         | 0.35         | 0.00         | -            | 12.24         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 11.61        | 10.89        | 12.30        | 11.90        | 11.91        | 6.75         | 3.89         | 4.41         | 8.38         | 11.90        | 11.22        | 11.29        | 116.45        |
| Pumps & Aux.  | 0.75         | 0.69         | 0.73         | 0.61         | 0.37         | 0.16         | 0.09         | 0.10         | 0.21         | 0.45         | 0.65         | 0.73         | 5.55          |
| Ext. Usage    | 0.70         | 0.54         | 0.59         | 0.58         | 0.41         | 0.40         | 0.41         | 0.67         | 0.65         | 0.67         | 0.68         | 0.70         | 6.99          |
| Misc. Equip.  | 5.43         | 5.13         | 6.14         | 5.41         | 5.91         | 5.23         | 4.57         | 5.15         | 4.22         | 5.67         | 5.41         | 5.20         | 63.47         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 17.27        | 16.30        | 19.53        | 17.21        | 18.78        | 16.60        | 14.48        | 16.32        | 13.43        | 18.03        | 17.19        | 16.51        | 201.65        |
| <b>Total</b>  | <b>35.77</b> | <b>33.55</b> | <b>39.32</b> | <b>35.81</b> | <b>38.49</b> | <b>31.30</b> | <b>26.80</b> | <b>30.54</b> | <b>28.14</b> | <b>37.08</b> | <b>35.15</b> | <b>34.43</b> | <b>406.36</b> |

**Gas Consumption (Btu x000,000)**

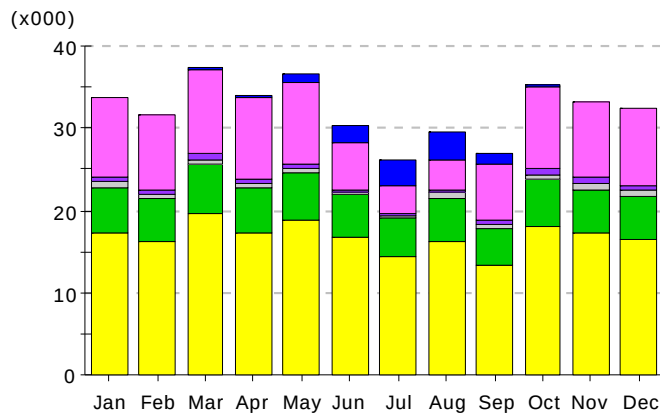
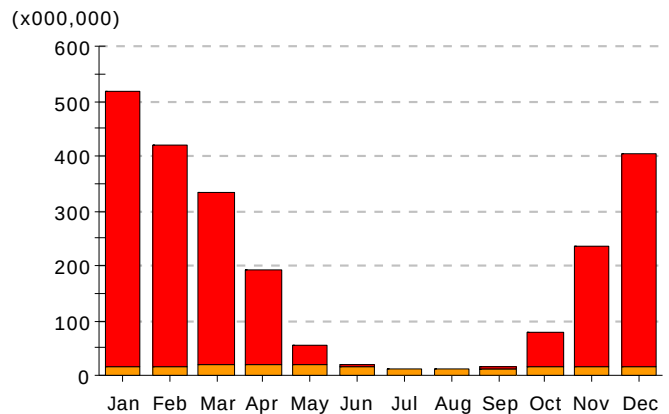
|               | Jan          | Feb          | Mar          | Apr          | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Space Heat    | 577.9        | 462.3        | 360.3        | 200.5        | 45.0        | 8.6         | 0.3         | -           | 5.5         | 73.1        | 259.3        | 456.4        | 2,449.2        |
| HP Supp.      | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Hot Water     | 17.6         | 17.2         | 20.6         | 17.9         | 18.1        | 14.4        | 11.5        | 12.3        | 10.6        | 14.8        | 15.2         | 15.8         | 186.1          |
| Vent. Fans    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Misc. Equip.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Task Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| <b>Total</b>  | <b>595.5</b> | <b>479.5</b> | <b>381.0</b> | <b>218.4</b> | <b>63.1</b> | <b>23.1</b> | <b>11.8</b> | <b>12.3</b> | <b>16.1</b> | <b>87.9</b> | <b>274.6</b> | <b>472.2</b> | <b>2,635.4</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | -            | -            | 0.01         | 0.10         | 1.07         | 2.06         | 3.28         | 3.81         | 1.22         | 0.34         | 0.00         | -            | 11.89         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 10.89        | 10.21        | 11.53        | 11.16        | 11.16        | 6.32         | 3.65         | 4.14         | 7.85         | 11.16        | 10.51        | 10.58        | 109.18        |
| Pumps & Aux.  | 0.76         | 0.68         | 0.75         | 0.70         | 0.68         | 0.37         | 0.20         | 0.23         | 0.47         | 0.68         | 0.71         | 0.76         | 7.00          |
| Ext. Usage    | 0.70         | 0.54         | 0.59         | 0.58         | 0.41         | 0.40         | 0.41         | 0.67         | 0.65         | 0.67         | 0.68         | 0.70         | 6.99          |
| Misc. Equip.  | 5.43         | 5.13         | 6.14         | 5.41         | 5.91         | 5.23         | 4.57         | 5.15         | 4.22         | 5.67         | 5.41         | 5.20         | 63.47         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 17.27        | 16.30        | 19.53        | 17.21        | 18.78        | 16.60        | 14.48        | 16.32        | 13.43        | 18.03        | 17.19        | 16.51        | 201.65        |
| <b>Total</b>  | <b>35.05</b> | <b>32.87</b> | <b>38.57</b> | <b>35.16</b> | <b>38.01</b> | <b>30.99</b> | <b>26.59</b> | <b>30.33</b> | <b>27.83</b> | <b>36.56</b> | <b>34.50</b> | <b>33.74</b> | <b>400.18</b> |

**Gas Consumption (Btu x000,000)**

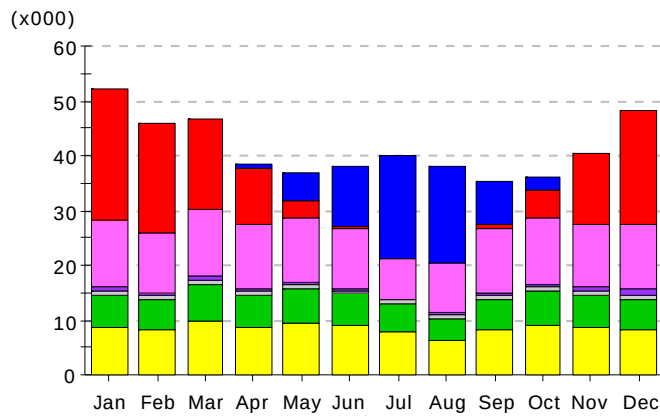
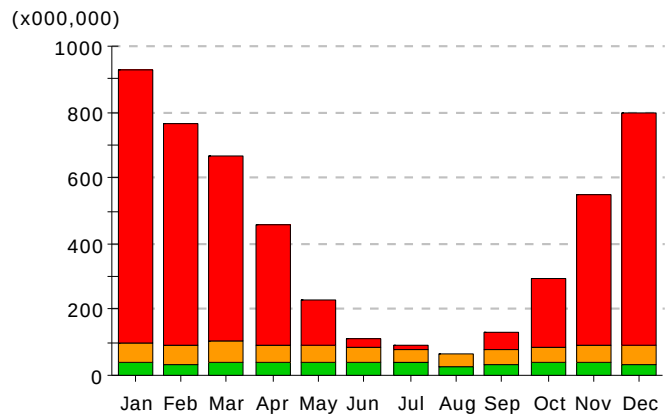
|               | Jan          | Feb          | Mar          | Apr          | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Space Heat    | 547.1        | 438.7        | 340.6        | 188.0        | 39.2        | 7.2         | 0.0         | -           | 4.5         | 65.8        | 242.1        | 429.6        | 2,302.9        |
| HP Supp.      | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Hot Water     | 17.6         | 17.2         | 20.6         | 17.9         | 18.1        | 14.4        | 11.5        | 12.3        | 10.6        | 14.8        | 15.2         | 15.8         | 186.1          |
| Vent. Fans    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Misc. Equip.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Task Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| <b>Total</b>  | <b>564.7</b> | <b>455.9</b> | <b>361.2</b> | <b>205.8</b> | <b>57.3</b> | <b>21.7</b> | <b>11.5</b> | <b>12.3</b> | <b>15.1</b> | <b>80.6</b> | <b>257.3</b> | <b>445.4</b> | <b>2,489.0</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | -            | -            | 0.01         | 0.10         | 1.05         | 2.03         | 3.14         | 3.63         | 1.20         | 0.34         | 0.00         | -            | 11.50         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 9.71         | 9.10         | 10.28        | 9.95         | 9.95         | 5.64         | 3.24         | 3.67         | 7.00         | 9.95         | 9.35         | 9.43         | 97.28         |
| Pumps & Aux.  | 0.71         | 0.64         | 0.70         | 0.66         | 0.63         | 0.34         | 0.19         | 0.22         | 0.43         | 0.63         | 0.65         | 0.71         | 6.50          |
| Ext. Usage    | 0.70         | 0.54         | 0.59         | 0.58         | 0.41         | 0.40         | 0.41         | 0.67         | 0.65         | 0.67         | 0.68         | 0.70         | 6.99          |
| Misc. Equip.  | 5.43         | 5.13         | 6.14         | 5.41         | 5.91         | 5.23         | 4.57         | 5.15         | 4.22         | 5.67         | 5.41         | 5.20         | 63.47         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 17.27        | 16.30        | 19.53        | 17.21        | 18.78        | 16.60        | 14.48        | 16.32        | 13.43        | 18.03        | 17.19        | 16.51        | 201.65        |
| <b>Total</b>  | <b>33.82</b> | <b>31.71</b> | <b>37.26</b> | <b>33.90</b> | <b>36.73</b> | <b>30.25</b> | <b>26.02</b> | <b>29.66</b> | <b>26.93</b> | <b>35.29</b> | <b>33.28</b> | <b>32.54</b> | <b>387.39</b> |

**Gas Consumption (Btu x000,000)**

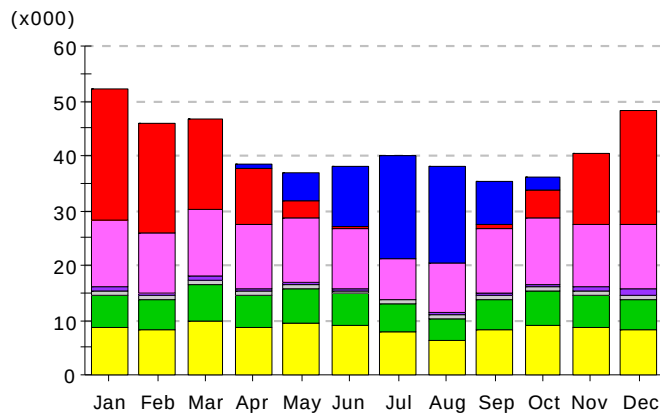
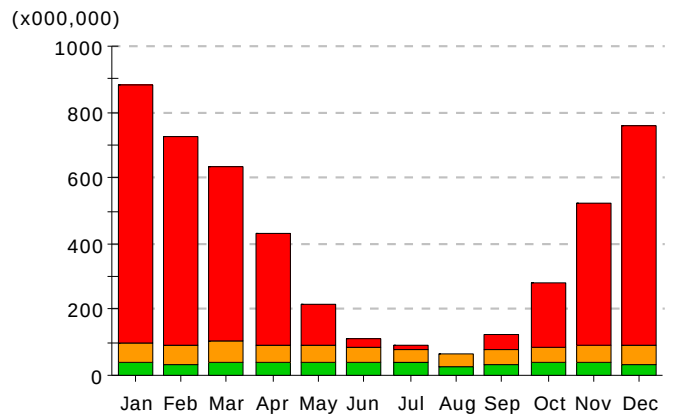
|               | Jan          | Feb          | Mar          | Apr          | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Space Heat    | 501.1        | 401.9        | 312.5        | 175.4        | 38.1        | 6.9         | 0.0         | -           | 4.6         | 63.1        | 221.5        | 389.6        | 2,114.7        |
| HP Supp.      | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Hot Water     | 17.6         | 17.2         | 20.6         | 17.9         | 18.1        | 14.4        | 11.5        | 12.3        | 10.6        | 14.8        | 15.2         | 15.8         | 186.1          |
| Vent. Fans    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Misc. Equip.  | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Task Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -           | -           | -           | -           | -           | -           | -            | -            | -              |
| <b>Total</b>  | <b>518.7</b> | <b>419.1</b> | <b>333.1</b> | <b>193.3</b> | <b>56.2</b> | <b>21.4</b> | <b>11.5</b> | <b>12.3</b> | <b>15.2</b> | <b>77.9</b> | <b>236.7</b> | <b>405.4</b> | <b>2,300.8</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 0.00         | 0.00         | 0.07         | 0.68         | 4.97         | 11.08        | 19.01        | 17.69        | 7.69         | 2.26         | 0.06         | -            | 63.50         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 24.03        | 19.69        | 16.58        | 10.30        | 3.04         | 0.41         | 0.06         | 0.02         | 0.90         | 5.33         | 12.91        | 20.49        | 113.77        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 12.13        | 10.95        | 12.09        | 11.69        | 12.08        | 10.93        | 7.27         | 9.04         | 11.69        | 12.08        | 11.70        | 12.10        | 133.75        |
| Pumps & Aux.  | 0.85         | 0.76         | 0.78         | 0.64         | 0.43         | 0.36         | 0.17         | 0.25         | 0.39         | 0.50         | 0.69         | 0.82         | 6.65          |
| Ext. Usage    | 0.80         | 0.61         | 0.68         | 0.65         | 0.47         | 0.45         | 0.47         | 0.76         | 0.74         | 0.76         | 0.77         | 0.80         | 7.95          |
| Misc. Equip.  | 5.81         | 5.49         | 6.58         | 5.79         | 6.33         | 5.91         | 5.27         | 4.11         | 5.53         | 6.07         | 5.79         | 5.55         | 68.23         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 8.71         | 8.23         | 9.87         | 8.69         | 9.48         | 8.84         | 7.84         | 6.14         | 8.30         | 9.10         | 8.68         | 8.33         | 102.21        |
| <b>Total</b>  | <b>52.33</b> | <b>45.73</b> | <b>46.64</b> | <b>38.44</b> | <b>36.80</b> | <b>37.97</b> | <b>40.09</b> | <b>38.01</b> | <b>35.25</b> | <b>36.11</b> | <b>40.58</b> | <b>48.10</b> | <b>496.06</b> |

**Gas Consumption (Btu x000,000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul         | Aug         | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Space Heat    | 828.4        | 672.4        | 565.4        | 366.6        | 135.8        | 32.3         | 14.6        | 3.2         | 56.7         | 210.0        | 459.3        | 702.7        | 4,047.5        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Hot Water     | 63.5         | 57.6         | 62.6         | 54.6         | 50.6         | 43.7         | 39.0        | 34.9        | 41.6         | 48.6         | 53.1         | 58.9         | 608.6          |
| Vent. Fans    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Misc. Equip.  | 36.4         | 34.6         | 41.9         | 36.4         | 40.1         | 38.2         | 36.4        | 27.4        | 34.6         | 38.2         | 36.4         | 34.6         | 435.4          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| <b>Total</b>  | <b>928.4</b> | <b>764.5</b> | <b>669.8</b> | <b>457.6</b> | <b>226.5</b> | <b>114.2</b> | <b>90.1</b> | <b>65.5</b> | <b>132.9</b> | <b>296.8</b> | <b>548.9</b> | <b>796.2</b> | <b>5,091.5</b> |

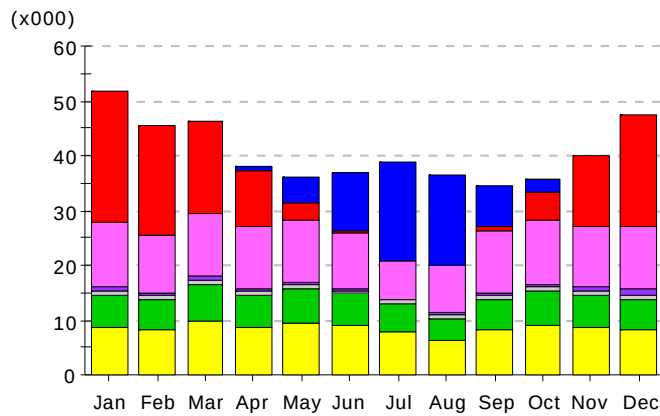
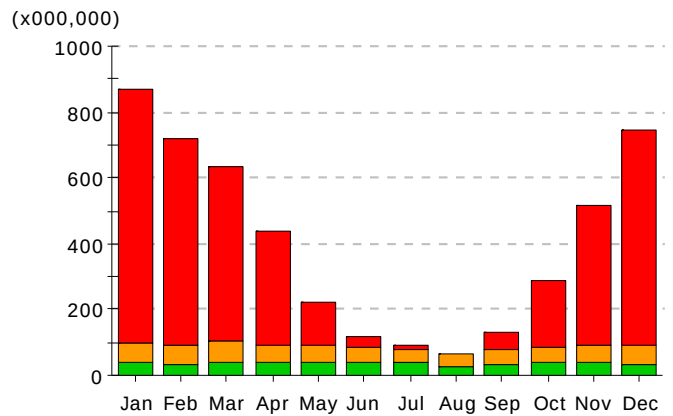
**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 0.00         | 0.00         | 0.07         | 0.68         | 4.97         | 11.08        | 19.01        | 17.69        | 7.69         | 2.26         | 0.06         | -            | 63.50         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 24.03        | 19.69        | 16.58        | 10.30        | 3.04         | 0.41         | 0.06         | 0.02         | 0.90         | 5.33         | 12.91        | 20.49        | 113.77        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 12.13        | 10.95        | 12.09        | 11.69        | 12.08        | 10.93        | 7.27         | 9.04         | 11.69        | 12.08        | 11.70        | 12.10        | 133.75        |
| Pumps & Aux.  | 0.85         | 0.76         | 0.78         | 0.64         | 0.43         | 0.36         | 0.17         | 0.25         | 0.39         | 0.50         | 0.69         | 0.82         | 6.65          |
| Ext. Usage    | 0.80         | 0.61         | 0.68         | 0.65         | 0.47         | 0.45         | 0.47         | 0.76         | 0.74         | 0.76         | 0.77         | 0.80         | 7.95          |
| Misc. Equip.  | 5.81         | 5.49         | 6.58         | 5.79         | 6.33         | 5.91         | 5.27         | 4.11         | 5.53         | 6.07         | 5.79         | 5.55         | 68.23         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 8.71         | 8.23         | 9.87         | 8.69         | 9.48         | 8.84         | 7.84         | 6.14         | 8.30         | 9.10         | 8.68         | 8.33         | 102.21        |
| <b>Total</b>  | <b>52.33</b> | <b>45.73</b> | <b>46.64</b> | <b>38.44</b> | <b>36.80</b> | <b>37.97</b> | <b>40.09</b> | <b>38.01</b> | <b>35.25</b> | <b>36.11</b> | <b>40.58</b> | <b>48.10</b> | <b>496.06</b> |

**Gas Consumption (Btu x000,000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul         | Aug         | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Space Heat    | 781.1        | 634.6        | 531.8        | 343.4        | 123.8        | 28.3         | 12.8        | 2.9         | 50.6         | 193.3        | 431.3        | 662.2        | 3,796.2        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Hot Water     | 63.5         | 57.6         | 62.6         | 54.6         | 50.6         | 43.7         | 39.0        | 34.9        | 41.6         | 48.6         | 53.1         | 58.9         | 608.6          |
| Vent. Fans    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Misc. Equip.  | 36.4         | 34.6         | 41.9         | 36.4         | 40.1         | 38.2         | 36.4        | 27.4        | 34.6         | 38.2         | 36.4         | 34.6         | 435.4          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| <b>Total</b>  | <b>881.0</b> | <b>726.8</b> | <b>636.2</b> | <b>434.4</b> | <b>214.5</b> | <b>110.2</b> | <b>88.3</b> | <b>65.2</b> | <b>126.8</b> | <b>280.1</b> | <b>520.8</b> | <b>755.7</b> | <b>4,840.2</b> |

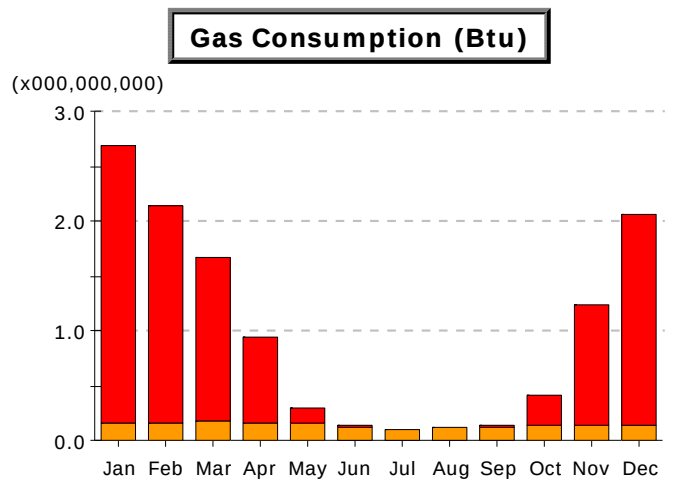
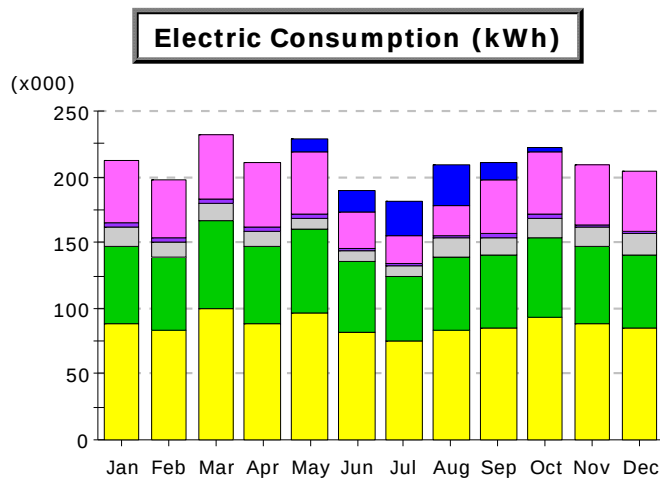


**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 0.00         | 0.00         | 0.08         | 0.66         | 4.83         | 10.58        | 18.13        | 16.69        | 7.50         | 2.29         | 0.08         | -            | 60.84         |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 24.03        | 19.69        | 16.58        | 10.30        | 3.04         | 0.41         | 0.06         | 0.02         | 0.90         | 5.33         | 12.91        | 20.49        | 113.77        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 11.67        | 10.53        | 11.63        | 11.24        | 11.62        | 10.50        | 6.95         | 8.67         | 11.24        | 11.62        | 11.25        | 11.64        | 128.55        |
| Pumps & Aux.  | 0.84         | 0.75         | 0.77         | 0.63         | 0.42         | 0.35         | 0.17         | 0.24         | 0.38         | 0.49         | 0.67         | 0.81         | 6.54          |
| Ext. Usage    | 0.80         | 0.61         | 0.68         | 0.65         | 0.47         | 0.45         | 0.47         | 0.76         | 0.74         | 0.76         | 0.77         | 0.80         | 7.95          |
| Misc. Equip.  | 5.81         | 5.49         | 6.58         | 5.79         | 6.33         | 5.91         | 5.27         | 4.11         | 5.53         | 6.07         | 5.79         | 5.55         | 68.23         |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 8.71         | 8.23         | 9.87         | 8.69         | 9.48         | 8.84         | 7.84         | 6.14         | 8.30         | 9.10         | 8.68         | 8.33         | 102.21        |
| <b>Total</b>  | <b>51.86</b> | <b>45.30</b> | <b>46.19</b> | <b>37.97</b> | <b>36.18</b> | <b>37.05</b> | <b>38.88</b> | <b>36.63</b> | <b>34.59</b> | <b>35.67</b> | <b>40.14</b> | <b>47.63</b> | <b>488.08</b> |

**Gas Consumption (Btu x000,000)**

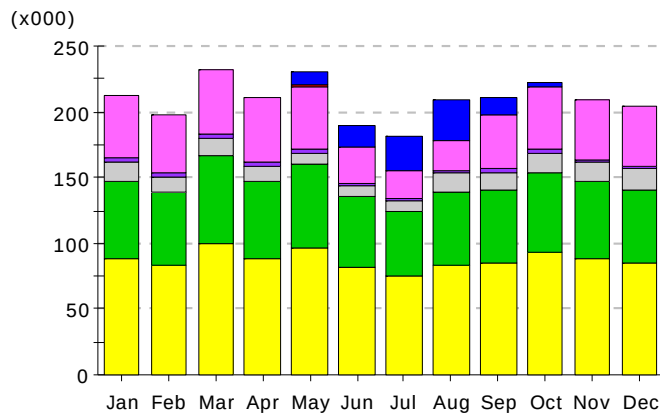
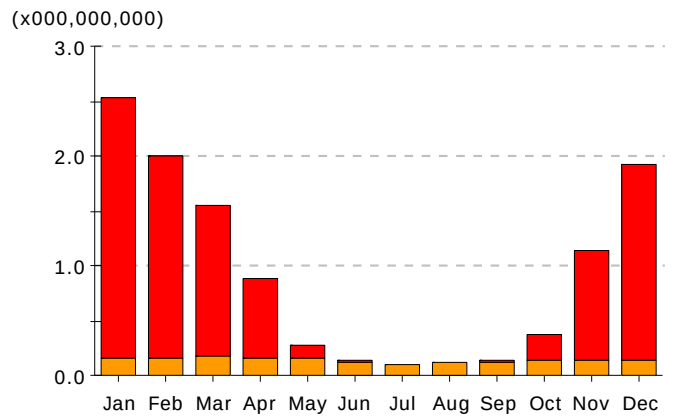
|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul         | Aug         | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Space Heat    | 771.1        | 626.1        | 526.4        | 343.8        | 130.3        | 32.9         | 14.7        | 3.6         | 56.1         | 197.9        | 426.6        | 652.0        | 3,781.6        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Hot Water     | 63.5         | 57.6         | 62.6         | 54.6         | 50.6         | 43.7         | 39.0        | 34.9        | 41.6         | 48.6         | 53.1         | 58.9         | 608.6          |
| Vent. Fans    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Misc. Equip.  | 36.4         | 34.6         | 41.9         | 36.4         | 40.1         | 38.2         | 36.4        | 27.4        | 34.6         | 38.2         | 36.4         | 34.6         | 435.4          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -            | -            | -           | -           | -            | -            | -            | -            | -              |
| <b>Total</b>  | <b>871.0</b> | <b>718.3</b> | <b>630.8</b> | <b>434.8</b> | <b>221.0</b> | <b>114.8</b> | <b>90.2</b> | <b>65.9</b> | <b>132.3</b> | <b>284.7</b> | <b>516.2</b> | <b>745.5</b> | <b>4,825.6</b> |

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | 0.1          | 0.9          | 9.8          | 16.5         | 27.0         | 30.8         | 12.9         | 3.5          | 0.1          | -            | 101.6          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 47.0         | 44.2         | 49.9         | 48.3         | 48.3         | 28.0         | 21.1         | 23.4         | 41.9         | 48.3         | 45.3         | 45.6         | 491.1          |
| Pumps & Aux.  | 2.6          | 2.4          | 2.6          | 2.5          | 2.4          | 1.2          | 0.8          | 0.9          | 2.1          | 2.5          | 2.5          | 2.6          | 25.2           |
| Ext. Usage    | 15.6         | 12.0         | 13.3         | 12.8         | 9.2          | 8.9          | 9.2          | 14.9         | 14.4         | 14.9         | 15.1         | 15.6         | 155.8          |
| Misc. Equip.  | 58.3         | 55.1         | 66.0         | 58.1         | 63.4         | 53.7         | 49.1         | 55.4         | 55.5         | 60.9         | 58.0         | 55.7         | 689.4          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 88.6         | 83.7         | 100.3        | 88.3         | 96.4         | 81.5         | 74.4         | 84.0         | 84.4         | 92.6         | 88.2         | 84.7         | 1,047.3        |
| <b>Total</b>  | <b>212.2</b> | <b>197.3</b> | <b>232.2</b> | <b>211.0</b> | <b>229.6</b> | <b>189.9</b> | <b>181.6</b> | <b>209.4</b> | <b>211.3</b> | <b>222.6</b> | <b>209.3</b> | <b>204.3</b> | <b>2,510.5</b> |

**Gas Consumption (Btu x000,000,000)**

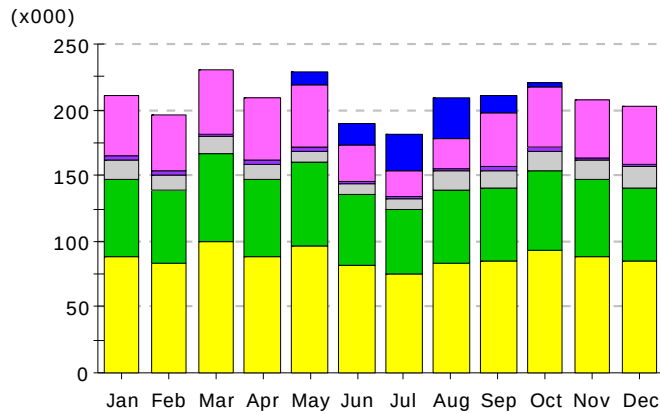
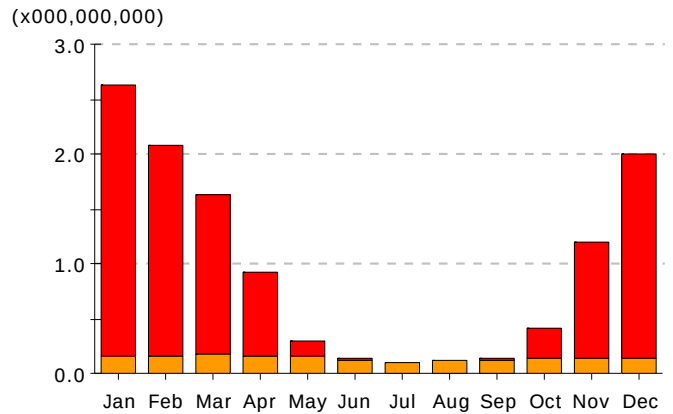
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 2.54        | 1.99        | 1.48        | 0.79        | 0.13        | 0.01        | -           | -           | 0.02        | 0.27        | 1.09        | 1.91        | 10.23        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.16        | 0.16        | 0.19        | 0.16        | 0.16        | 0.12        | 0.10        | 0.11        | 0.12        | 0.13        | 0.14        | 0.14        | 1.70         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.70</b> | <b>2.14</b> | <b>1.67</b> | <b>0.95</b> | <b>0.29</b> | <b>0.13</b> | <b>0.10</b> | <b>0.11</b> | <b>0.14</b> | <b>0.41</b> | <b>1.23</b> | <b>2.06</b> | <b>11.93</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | 0.1          | 0.9          | 9.8          | 16.5         | 27.0         | 30.8         | 12.9         | 3.5          | 0.1          | -            | 101.6          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | 0.9          | 0.7          | 0.5          | 0.3          | 0.0          | 0.0          | -            | -            | 0.0          | 0.1          | 0.4          | 0.7          | 3.6            |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 47.0         | 44.2         | 49.9         | 48.3         | 48.3         | 28.0         | 21.1         | 23.4         | 41.9         | 48.3         | 45.3         | 45.6         | 491.1          |
| Pumps & Aux.  | 2.6          | 2.4          | 2.6          | 2.5          | 2.4          | 1.2          | 0.8          | 0.9          | 2.1          | 2.5          | 2.5          | 2.6          | 25.2           |
| Ext. Usage    | 15.6         | 12.0         | 13.3         | 12.8         | 9.2          | 8.9          | 9.2          | 14.9         | 14.4         | 14.9         | 15.1         | 15.6         | 155.8          |
| Misc. Equip.  | 58.3         | 55.1         | 66.0         | 58.1         | 63.4         | 53.7         | 49.1         | 55.4         | 55.5         | 60.9         | 58.0         | 55.7         | 689.4          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 88.6         | 83.7         | 100.3        | 88.3         | 96.4         | 81.5         | 74.4         | 84.0         | 84.4         | 92.6         | 88.2         | 84.7         | 1,047.3        |
| <b>Total</b>  | <b>213.1</b> | <b>198.0</b> | <b>232.7</b> | <b>211.3</b> | <b>229.6</b> | <b>189.9</b> | <b>181.6</b> | <b>209.4</b> | <b>211.3</b> | <b>222.7</b> | <b>209.6</b> | <b>204.9</b> | <b>2,514.1</b> |

**Gas Consumption (Btu x000,000,000)**

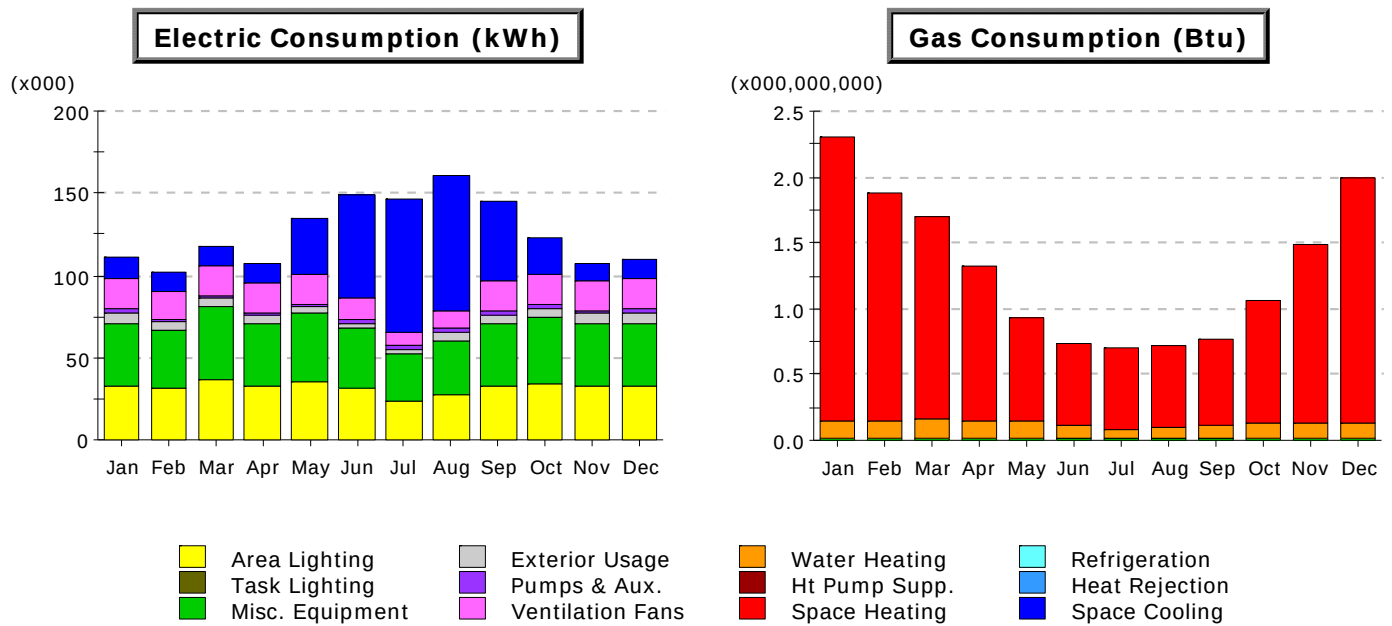
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 2.37        | 1.85        | 1.37        | 0.71        | 0.11        | 0.00        | -           | -           | 0.02        | 0.24        | 0.99        | 1.78        | 9.44         |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.16        | 0.16        | 0.19        | 0.16        | 0.16        | 0.12        | 0.10        | 0.11        | 0.12        | 0.13        | 0.14        | 0.14        | 1.70         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.53</b> | <b>2.01</b> | <b>1.55</b> | <b>0.87</b> | <b>0.27</b> | <b>0.13</b> | <b>0.10</b> | <b>0.11</b> | <b>0.13</b> | <b>0.37</b> | <b>1.13</b> | <b>1.92</b> | <b>11.14</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | 0.1          | 0.9          | 9.8          | 16.5         | 26.9         | 30.6         | 12.9         | 3.5          | 0.1          | -            | 101.3          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 45.8         | 43.0         | 48.6         | 47.1         | 47.1         | 27.4         | 20.7         | 22.9         | 40.9         | 47.1         | 44.1         | 44.4         | 478.9          |
| Pumps & Aux.  | 2.6          | 2.3          | 2.6          | 2.5          | 2.4          | 1.2          | 0.8          | 0.9          | 2.1          | 2.4          | 2.4          | 2.6          | 24.7           |
| Ext. Usage    | 15.6         | 12.0         | 13.3         | 12.8         | 9.2          | 8.9          | 9.2          | 14.9         | 14.4         | 14.9         | 15.1         | 15.6         | 155.8          |
| Misc. Equip.  | 58.3         | 55.1         | 66.0         | 58.1         | 63.4         | 53.7         | 49.1         | 55.4         | 55.5         | 60.9         | 58.0         | 55.7         | 689.4          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 88.6         | 83.7         | 100.3        | 88.3         | 96.4         | 81.5         | 74.4         | 84.0         | 84.4         | 92.6         | 88.2         | 84.7         | 1,047.3        |
| <b>Total</b>  | <b>210.9</b> | <b>196.1</b> | <b>230.9</b> | <b>209.7</b> | <b>228.3</b> | <b>189.1</b> | <b>181.0</b> | <b>208.8</b> | <b>210.2</b> | <b>221.3</b> | <b>208.0</b> | <b>203.0</b> | <b>2,497.5</b> |

**Gas Consumption (Btu x000,000,000)**

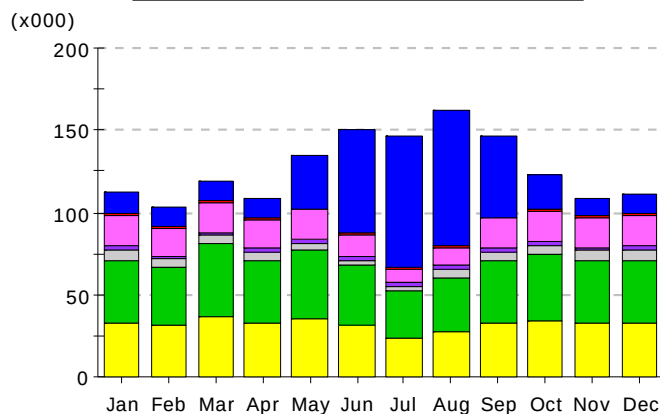
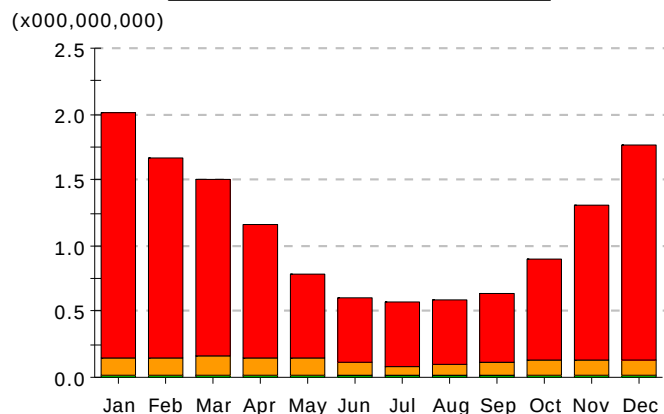
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 2.46        | 1.93        | 1.44        | 0.77        | 0.13        | 0.01        | -           | -           | 0.02        | 0.27        | 1.05        | 1.85        | 9.94         |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.16        | 0.16        | 0.19        | 0.16        | 0.16        | 0.12        | 0.10        | 0.11        | 0.12        | 0.13        | 0.14        | 0.14        | 1.70         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.62</b> | <b>2.09</b> | <b>1.63</b> | <b>0.93</b> | <b>0.29</b> | <b>0.13</b> | <b>0.10</b> | <b>0.11</b> | <b>0.14</b> | <b>0.40</b> | <b>1.19</b> | <b>1.99</b> | <b>11.63</b> |

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | 13.2         | 11.0         | 11.4         | 11.2         | 32.8         | 62.4         | 80.9         | 82.2         | 48.8         | 21.9         | 11.0         | 12.0         | 398.9          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 18.9         | 16.9         | 18.5         | 17.9         | 18.5         | 13.9         | 8.2          | 11.0         | 17.9         | 18.5         | 17.9         | 18.6         | 196.7          |
| Pumps & Aux.  | 1.9          | 1.7          | 1.9          | 1.8          | 1.9          | 1.8          | 1.8          | 1.9          | 1.8          | 1.9          | 1.8          | 1.9          | 22.0           |
| Ext. Usage    | 6.1          | 4.7          | 5.2          | 5.1          | 3.6          | 3.5          | 3.6          | 5.9          | 5.7          | 5.9          | 5.9          | 6.1          | 61.4           |
| Misc. Equip.  | 38.4         | 36.3         | 43.5         | 38.3         | 41.8         | 36.4         | 28.0         | 32.5         | 38.2         | 40.1         | 38.2         | 38.4         | 450.0          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 32.7         | 30.9         | 37.0         | 32.6         | 35.6         | 30.9         | 23.7         | 27.5         | 32.5         | 34.1         | 32.5         | 32.7         | 382.8          |
| <b>Total</b>  | <b>111.2</b> | <b>101.5</b> | <b>117.5</b> | <b>106.8</b> | <b>134.1</b> | <b>149.0</b> | <b>146.2</b> | <b>160.9</b> | <b>144.9</b> | <b>122.4</b> | <b>107.4</b> | <b>109.7</b> | <b>1,511.8</b> |

**Gas Consumption (Btu x000,000,000)**

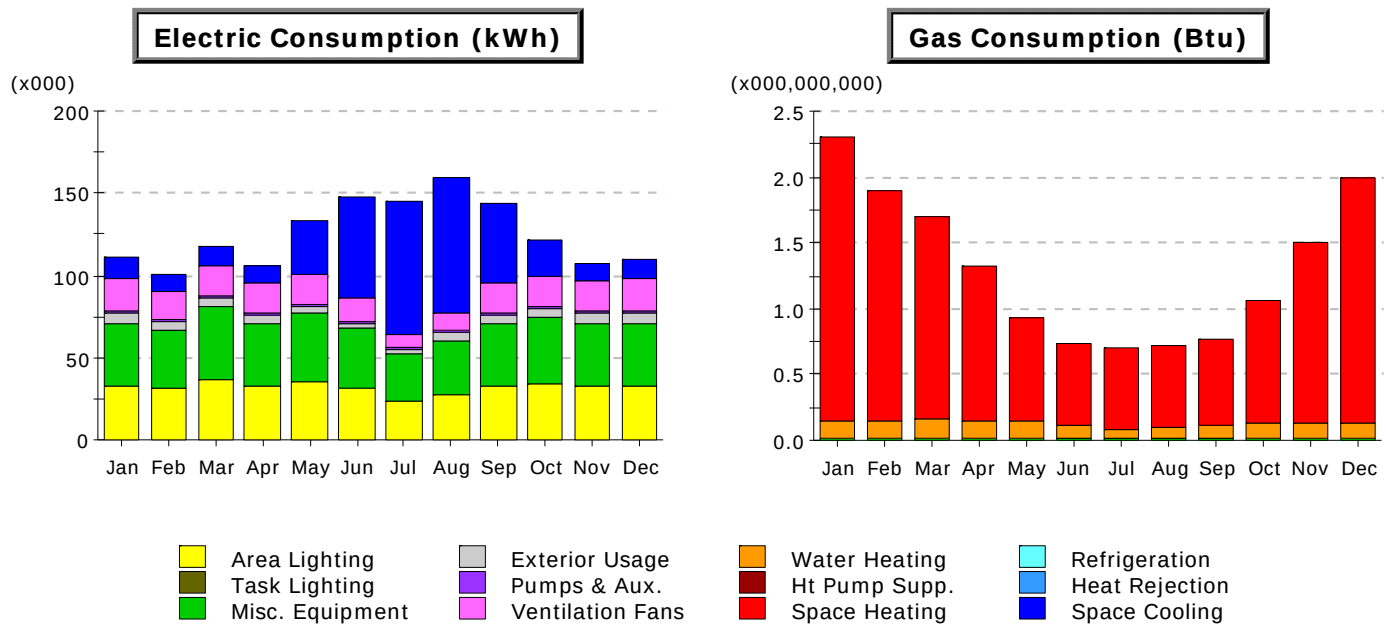
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 2.15        | 1.75        | 1.54        | 1.18        | 0.78        | 0.61        | 0.62        | 0.62        | 0.66        | 0.93        | 1.37        | 1.85        | 14.05        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.13        | 0.13        | 0.15        | 0.13        | 0.13        | 0.11        | 0.07        | 0.08        | 0.10        | 0.11        | 0.11        | 0.12        | 1.37         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | 0.01        | 0.01        | 0.02        | 0.01        | 0.02        | 0.02        | 0.01        | 0.02        | 0.01        | 0.02        | 0.01        | 0.01        | 0.19         |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.30</b> | <b>1.89</b> | <b>1.70</b> | <b>1.32</b> | <b>0.93</b> | <b>0.73</b> | <b>0.71</b> | <b>0.72</b> | <b>0.77</b> | <b>1.05</b> | <b>1.50</b> | <b>1.99</b> | <b>15.60</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | 13.2         | 11.0         | 11.4         | 11.2         | 32.8         | 62.4         | 80.9         | 82.2         | 48.8         | 21.9         | 11.0         | 12.0         | 398.9          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | 1.5          | 1.2          | 1.1          | 0.9          | 0.7          | 0.6          | 0.6          | 0.6          | 0.6          | 0.7          | 1.0          | 1.3          | 10.8           |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 18.9         | 16.9         | 18.5         | 17.9         | 18.5         | 13.9         | 8.2          | 11.0         | 17.9         | 18.5         | 17.9         | 18.6         | 196.7          |
| Pumps & Aux.  | 2.1          | 1.9          | 2.1          | 2.0          | 2.1          | 2.0          | 2.0          | 2.1          | 2.0          | 2.1          | 2.0          | 2.1          | 24.7           |
| Ext. Usage    | 6.1          | 4.7          | 5.2          | 5.1          | 3.6          | 3.5          | 3.6          | 5.9          | 5.7          | 5.9          | 5.9          | 6.1          | 61.4           |
| Misc. Equip.  | 38.4         | 36.3         | 43.5         | 38.3         | 41.8         | 36.4         | 28.0         | 32.5         | 38.2         | 40.1         | 38.2         | 38.4         | 450.0          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 32.7         | 30.9         | 37.0         | 32.6         | 35.6         | 30.9         | 23.7         | 27.5         | 32.5         | 34.1         | 32.5         | 32.7         | 382.8          |
| <b>Total</b>  | <b>112.9</b> | <b>102.9</b> | <b>118.8</b> | <b>107.9</b> | <b>135.0</b> | <b>149.9</b> | <b>147.0</b> | <b>161.8</b> | <b>145.8</b> | <b>123.4</b> | <b>108.6</b> | <b>111.3</b> | <b>1,525.2</b> |

**Gas Consumption (Btu x000,000,000)**

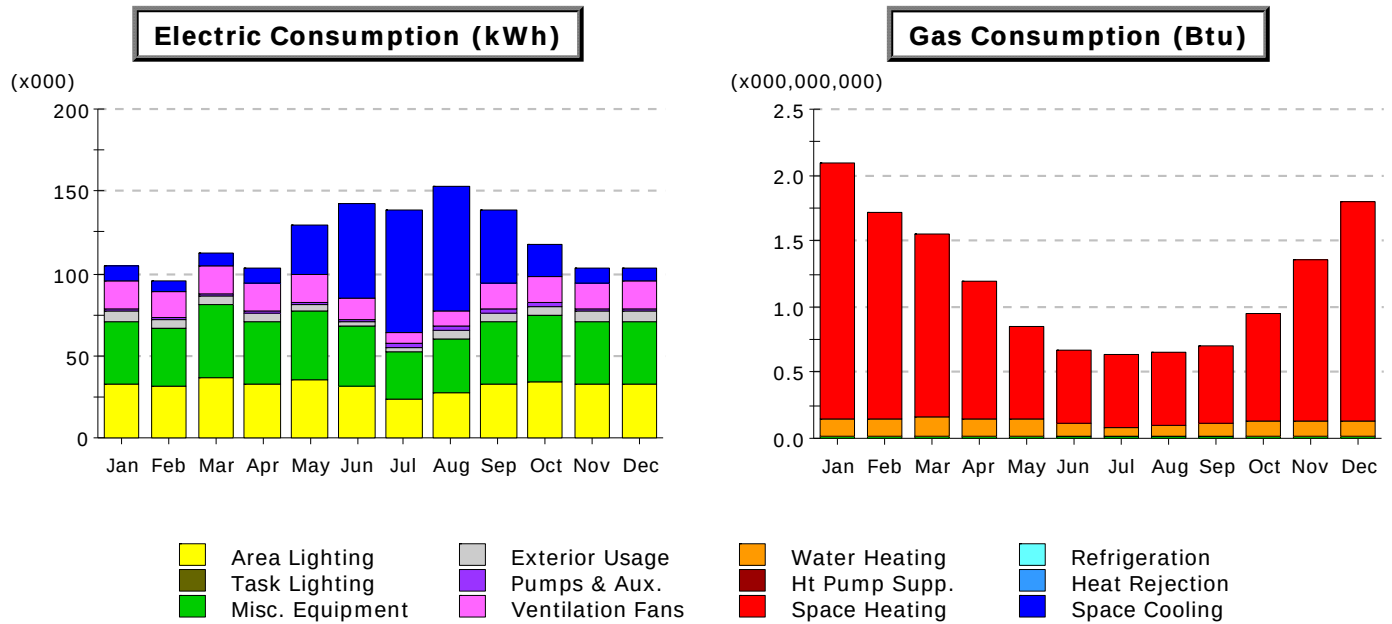
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 1.87        | 1.52        | 1.34        | 1.01        | 0.63        | 0.49        | 0.49        | 0.49        | 0.52        | 0.77        | 1.18        | 1.63        | 11.94        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.13        | 0.13        | 0.15        | 0.13        | 0.13        | 0.11        | 0.07        | 0.08        | 0.10        | 0.11        | 0.11        | 0.12        | 1.37         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | 0.01        | 0.01        | 0.02        | 0.01        | 0.02        | 0.02        | 0.01        | 0.02        | 0.01        | 0.02        | 0.01        | 0.01        | 0.19         |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.01</b> | <b>1.66</b> | <b>1.51</b> | <b>1.15</b> | <b>0.78</b> | <b>0.61</b> | <b>0.58</b> | <b>0.59</b> | <b>0.64</b> | <b>0.90</b> | <b>1.31</b> | <b>1.76</b> | <b>13.50</b> |

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | 13.2         | 11.0         | 11.4         | 11.2         | 32.8         | 62.4         | 80.9         | 82.2         | 48.8         | 21.9         | 11.0         | 12.0         | 398.9          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 18.9         | 16.9         | 18.5         | 17.9         | 18.5         | 13.9         | 8.2          | 11.0         | 17.9         | 18.5         | 17.9         | 18.6         | 196.7          |
| Pumps & Aux.  | 1.6          | 1.4          | 1.5          | 1.3          | 1.1          | 0.9          | 0.8          | 0.8          | 1.0          | 1.3          | 1.5          | 1.6          | 14.9           |
| Ext. Usage    | 6.1          | 4.7          | 5.2          | 5.1          | 3.6          | 3.5          | 3.6          | 5.9          | 5.7          | 5.9          | 5.9          | 6.1          | 61.4           |
| Misc. Equip.  | 38.4         | 36.3         | 43.5         | 38.3         | 41.8         | 36.4         | 28.0         | 32.5         | 38.2         | 40.1         | 38.2         | 38.4         | 450.0          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 32.7         | 30.9         | 37.0         | 32.6         | 35.6         | 30.9         | 23.7         | 27.5         | 32.5         | 34.1         | 32.5         | 32.7         | 382.8          |
| <b>Total</b>  | <b>110.9</b> | <b>101.2</b> | <b>117.1</b> | <b>106.3</b> | <b>133.4</b> | <b>148.1</b> | <b>145.2</b> | <b>159.9</b> | <b>144.1</b> | <b>121.8</b> | <b>107.1</b> | <b>109.5</b> | <b>1,504.6</b> |

**Gas Consumption (Btu x000,000,000)**

|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 2.16        | 1.75        | 1.54        | 1.18        | 0.78        | 0.62        | 0.62        | 0.62        | 0.66        | 0.93        | 1.37        | 1.85        | 14.07        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.13        | 0.13        | 0.15        | 0.13        | 0.13        | 0.11        | 0.07        | 0.08        | 0.10        | 0.11        | 0.11        | 0.12        | 1.37         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | 0.01        | 0.01        | 0.02        | 0.01        | 0.02        | 0.02        | 0.01        | 0.02        | 0.01        | 0.02        | 0.01        | 0.01        | 0.19         |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.30</b> | <b>1.89</b> | <b>1.71</b> | <b>1.32</b> | <b>0.93</b> | <b>0.74</b> | <b>0.71</b> | <b>0.72</b> | <b>0.77</b> | <b>1.06</b> | <b>1.50</b> | <b>1.99</b> | <b>15.63</b> |

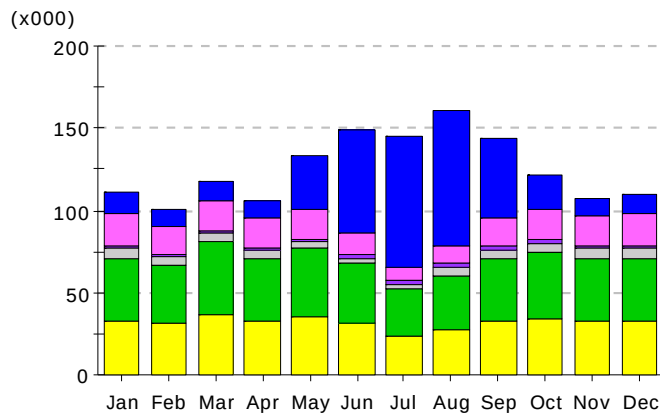
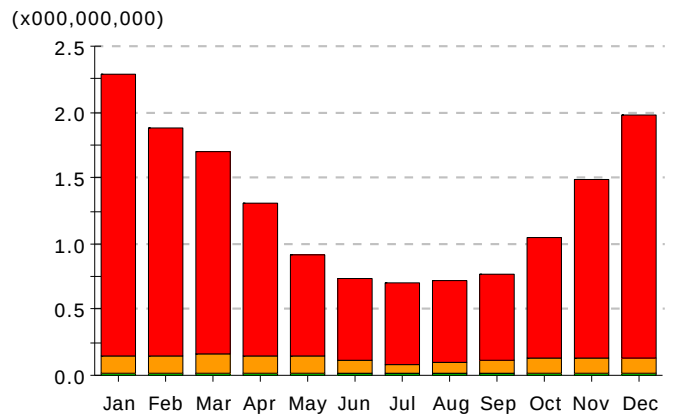
**Electric Consumption (kWh x000)**

|               | Jan          | Feb         | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | 8.8          | 7.1         | 8.1          | 9.2          | 29.9         | 57.3         | 74.8         | 76.0         | 44.6         | 19.8         | 8.6          | 7.9          | 352.2          |
| Heat Reject.  | -            | -           | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -           | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | -            | -           | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| HP Supp.      | -            | -           | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -           | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 17.0         | 15.2        | 16.7         | 16.1         | 16.7         | 12.6         | 7.3          | 9.9          | 16.1         | 16.6         | 16.1         | 16.8         | 177.2          |
| Pumps & Aux.  | 1.7          | 1.6         | 1.7          | 1.7          | 1.7          | 1.7          | 1.7          | 1.7          | 1.7          | 1.7          | 1.7          | 1.7          | 20.2           |
| Ext. Usage    | 6.1          | 4.7         | 5.2          | 5.1          | 3.6          | 3.5          | 3.6          | 5.9          | 5.7          | 5.9          | 5.9          | 6.1          | 61.4           |
| Misc. Equip.  | 38.4         | 36.3        | 43.5         | 38.3         | 41.8         | 36.4         | 28.0         | 32.5         | 38.2         | 40.1         | 38.2         | 38.4         | 450.0          |
| Task Lights   | -            | -           | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 32.7         | 30.9        | 37.0         | 32.6         | 35.6         | 30.9         | 23.7         | 27.5         | 32.5         | 34.1         | 32.5         | 32.7         | 382.8          |
| <b>Total</b>  | <b>104.8</b> | <b>95.8</b> | <b>112.2</b> | <b>102.9</b> | <b>129.2</b> | <b>142.4</b> | <b>139.1</b> | <b>153.5</b> | <b>138.9</b> | <b>118.3</b> | <b>103.1</b> | <b>103.6</b> | <b>1,443.8</b> |

**Gas Consumption (Btu x000,000,000)**

|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 1.94        | 1.57        | 1.38        | 1.05        | 0.69        | 0.54        | 0.55        | 0.56        | 0.58        | 0.83        | 1.23        | 1.66        | 12.59        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.13        | 0.13        | 0.15        | 0.13        | 0.13        | 0.11        | 0.07        | 0.08        | 0.10        | 0.11        | 0.11        | 0.12        | 1.37         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | 0.01        | 0.01        | 0.02        | 0.01        | 0.02        | 0.02        | 0.01        | 0.02        | 0.01        | 0.02        | 0.01        | 0.01        | 0.19         |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.09</b> | <b>1.71</b> | <b>1.55</b> | <b>1.20</b> | <b>0.84</b> | <b>0.67</b> | <b>0.64</b> | <b>0.65</b> | <b>0.70</b> | <b>0.95</b> | <b>1.35</b> | <b>1.80</b> | <b>14.15</b> |

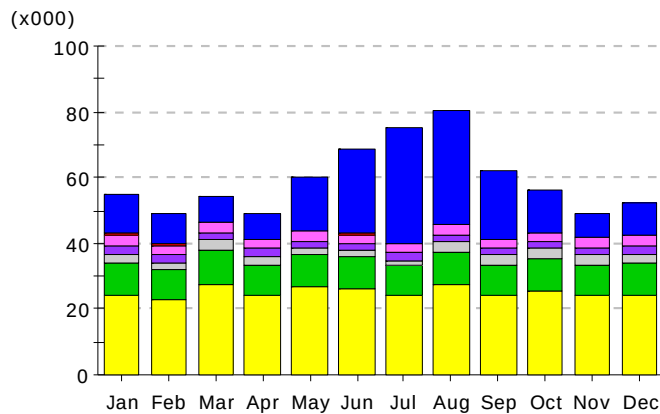
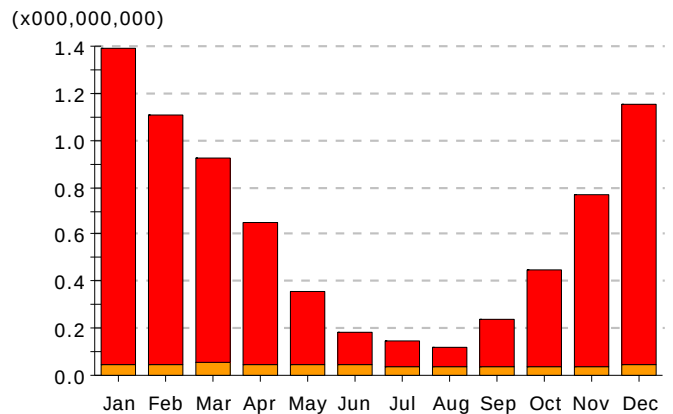


**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | 12.8         | 10.7         | 11.1         | 11.0         | 32.5         | 62.0         | 80.4         | 81.7         | 48.4         | 21.8         | 10.8         | 11.7         | 394.8          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 18.7         | 16.8         | 18.4         | 17.8         | 18.3         | 13.8         | 8.1          | 10.9         | 17.7         | 18.3         | 17.8         | 18.5         | 195.1          |
| Pumps & Aux.  | 1.9          | 1.7          | 1.9          | 1.8          | 1.9          | 1.8          | 1.8          | 1.9          | 1.8          | 1.9          | 1.8          | 1.9          | 21.8           |
| Ext. Usage    | 6.1          | 4.7          | 5.2          | 5.1          | 3.6          | 3.5          | 3.6          | 5.9          | 5.7          | 5.9          | 5.9          | 6.1          | 61.4           |
| Misc. Equip.  | 38.4         | 36.3         | 43.5         | 38.3         | 41.8         | 36.4         | 28.0         | 32.5         | 38.2         | 40.1         | 38.2         | 38.4         | 450.0          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 32.7         | 30.9         | 37.0         | 32.6         | 35.6         | 30.9         | 23.7         | 27.5         | 32.5         | 34.1         | 32.5         | 32.7         | 382.8          |
| <b>Total</b>  | <b>110.6</b> | <b>101.0</b> | <b>117.0</b> | <b>106.5</b> | <b>133.7</b> | <b>148.5</b> | <b>145.6</b> | <b>160.3</b> | <b>144.4</b> | <b>122.1</b> | <b>107.1</b> | <b>109.2</b> | <b>1,505.9</b> |

**Gas Consumption (Btu x000,000,000)**

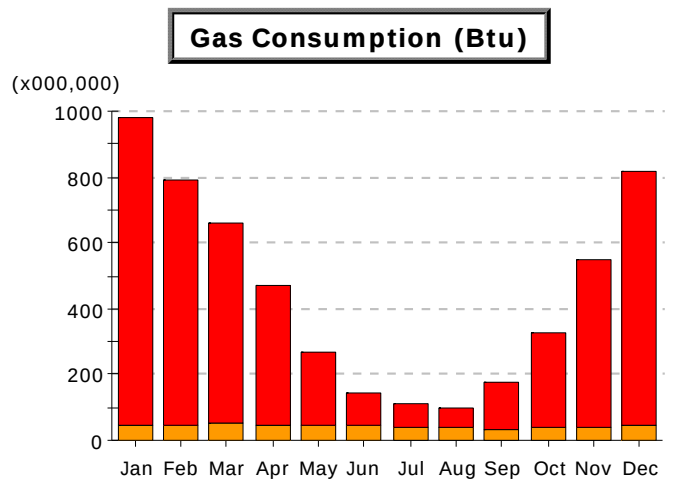
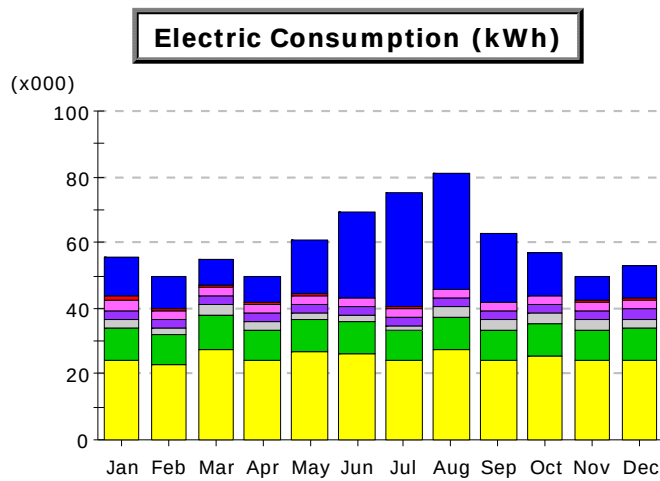
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total        |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Space Heat    | 2.14        | 1.73        | 1.52        | 1.17        | 0.77        | 0.61        | 0.61        | 0.61        | 0.65        | 0.92        | 1.36        | 1.84        | 13.93        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Hot Water     | 0.13        | 0.13        | 0.15        | 0.13        | 0.13        | 0.11        | 0.07        | 0.08        | 0.10        | 0.11        | 0.11        | 0.12        | 1.37         |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Misc. Equip.  | 0.01        | 0.01        | 0.02        | 0.01        | 0.02        | 0.02        | 0.01        | 0.02        | 0.01        | 0.02        | 0.01        | 0.01        | 0.19         |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -            |
| <b>Total</b>  | <b>2.28</b> | <b>1.87</b> | <b>1.69</b> | <b>1.31</b> | <b>0.92</b> | <b>0.73</b> | <b>0.70</b> | <b>0.71</b> | <b>0.76</b> | <b>1.05</b> | <b>1.48</b> | <b>1.97</b> | <b>15.48</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 12.29        | 9.43         | 7.78         | 7.66         | 16.43        | 25.75        | 35.15        | 34.85        | 20.75        | 12.47        | 6.92         | 9.35         | 198.82        |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 0.52         | 0.42         | 0.35         | 0.26         | 0.15         | 0.08         | 0.06         | 0.05         | 0.11         | 0.20         | 0.30         | 0.44         | 2.94          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 3.16         | 2.77         | 2.87         | 2.64         | 2.81         | 2.70         | 2.71         | 2.95         | 2.76         | 2.67         | 2.68         | 2.99         | 33.71         |
| Pumps & Aux.  | 2.35         | 2.13         | 2.37         | 2.24         | 2.21         | 2.13         | 2.20         | 2.20         | 2.13         | 2.25         | 2.26         | 2.38         | 26.84         |
| Ext. Usage    | 3.19         | 2.45         | 2.71         | 2.63         | 1.88         | 1.82         | 1.88         | 3.05         | 2.95         | 3.05         | 3.09         | 3.19         | 31.89         |
| Misc. Equip.  | 9.24         | 8.74         | 10.48        | 9.23         | 10.07        | 9.91         | 9.04         | 10.23        | 9.20         | 9.67         | 9.20         | 9.24         | 114.24        |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 24.45        | 23.11        | 27.75        | 24.41        | 26.65        | 26.24        | 23.97        | 27.15        | 24.34        | 25.59        | 24.34        | 24.45        | 302.44        |
| <b>Total</b>  | <b>55.21</b> | <b>49.05</b> | <b>54.31</b> | <b>49.06</b> | <b>60.19</b> | <b>68.62</b> | <b>75.00</b> | <b>80.48</b> | <b>62.23</b> | <b>55.89</b> | <b>48.79</b> | <b>52.04</b> | <b>710.88</b> |

**Gas Consumption (Btu x000,000,000)**

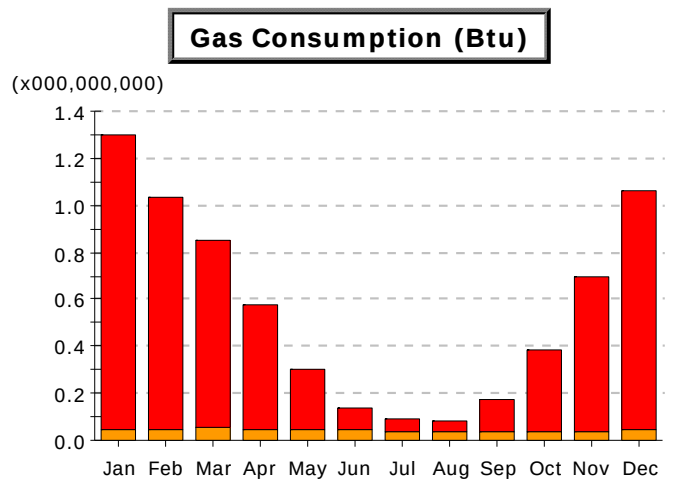
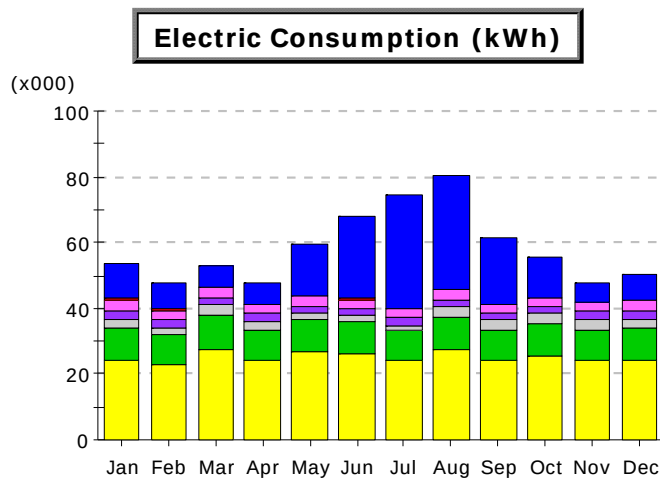
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total       |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Space Heat    | 1.34        | 1.07        | 0.87        | 0.60        | 0.31        | 0.14        | 0.11        | 0.08        | 0.20        | 0.41        | 0.73        | 1.11        | 6.96        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Hot Water     | 0.05        | 0.04        | 0.05        | 0.05        | 0.05        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.51        |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| <b>Total</b>  | <b>1.39</b> | <b>1.11</b> | <b>0.92</b> | <b>0.65</b> | <b>0.36</b> | <b>0.19</b> | <b>0.14</b> | <b>0.12</b> | <b>0.24</b> | <b>0.45</b> | <b>0.77</b> | <b>1.15</b> | <b>7.47</b> |

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 12.29        | 9.43         | 7.78         | 7.66         | 16.43        | 25.75        | 35.15        | 34.85        | 20.75        | 12.47        | 6.92         | 9.35         | 198.82        |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 0.85         | 0.72         | 0.72         | 0.62         | 0.46         | 0.29         | 0.23         | 0.19         | 0.36         | 0.57         | 0.68         | 0.77         | 6.46          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 3.16         | 2.77         | 2.87         | 2.64         | 2.81         | 2.70         | 2.71         | 2.95         | 2.76         | 2.67         | 2.68         | 2.99         | 33.71         |
| Pumps & Aux.  | 2.65         | 2.40         | 2.67         | 2.53         | 2.51         | 2.42         | 2.50         | 2.50         | 2.42         | 2.55         | 2.55         | 2.68         | 30.37         |
| Ext. Usage    | 3.19         | 2.45         | 2.71         | 2.63         | 1.88         | 1.82         | 1.88         | 3.05         | 2.95         | 3.05         | 3.09         | 3.19         | 31.89         |
| Misc. Equip.  | 9.24         | 8.74         | 10.48        | 9.23         | 10.07        | 9.91         | 9.04         | 10.23        | 9.20         | 9.67         | 9.20         | 9.24         | 114.24        |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 24.45        | 23.11        | 27.75        | 24.41        | 26.65        | 26.24        | 23.97        | 27.15        | 24.34        | 25.59        | 24.34        | 24.45        | 302.44        |
| <b>Total</b>  | <b>55.83</b> | <b>49.62</b> | <b>54.98</b> | <b>49.72</b> | <b>60.80</b> | <b>69.12</b> | <b>75.47</b> | <b>80.92</b> | <b>62.78</b> | <b>56.57</b> | <b>49.46</b> | <b>52.68</b> | <b>717.93</b> |

**Gas Consumption (Btu x000,000)**

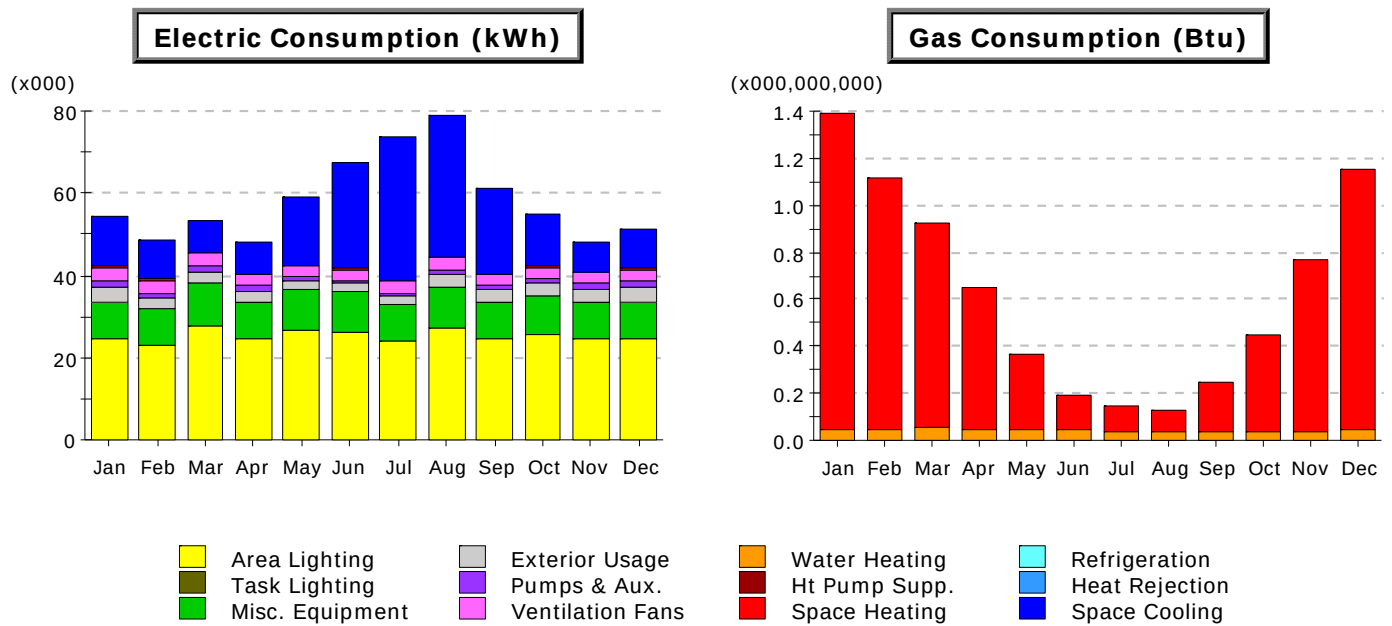
|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug         | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Space Heat    | 937.5        | 744.1        | 608.1        | 422.8        | 219.5        | 102.8        | 76.2         | 57.7        | 143.4        | 287.1        | 510.4        | 773.3        | 4,882.7        |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Hot Water     | 45.5         | 44.5         | 53.4         | 46.2         | 46.9         | 42.9         | 36.8         | 39.6        | 35.1         | 38.4         | 39.3         | 42.7         | 511.3          |
| Vent. Fans    | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Pumps & Aux.  | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Misc. Equip.  | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| Area Lights   | -            | -            | -            | -            | -            | -            | -            | -           | -            | -            | -            | -            | -              |
| <b>Total</b>  | <b>983.0</b> | <b>788.6</b> | <b>661.5</b> | <b>469.0</b> | <b>266.3</b> | <b>145.7</b> | <b>113.0</b> | <b>97.2</b> | <b>178.5</b> | <b>325.5</b> | <b>549.7</b> | <b>815.9</b> | <b>5,394.0</b> |

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 10.68        | 7.89         | 6.70         | 6.58         | 15.83        | 25.26        | 34.71        | 34.51        | 20.32        | 11.83        | 5.89         | 7.81         | 188.01        |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 0.49         | 0.39         | 0.33         | 0.24         | 0.13         | 0.05         | 0.03         | 0.02         | 0.08         | 0.18         | 0.28         | 0.40         | 2.62          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 3.09         | 2.70         | 2.83         | 2.60         | 2.79         | 2.69         | 2.70         | 2.96         | 2.75         | 2.66         | 2.65         | 2.93         | 33.33         |
| Pumps & Aux.  | 2.39         | 2.18         | 2.41         | 2.28         | 2.21         | 2.13         | 2.20         | 2.20         | 2.13         | 2.25         | 2.29         | 2.42         | 27.08         |
| Ext. Usage    | 3.19         | 2.45         | 2.71         | 2.63         | 1.88         | 1.82         | 1.88         | 3.05         | 2.95         | 3.05         | 3.09         | 3.19         | 31.89         |
| Misc. Equip.  | 9.24         | 8.74         | 10.48        | 9.23         | 10.07        | 9.91         | 9.04         | 10.23        | 9.20         | 9.67         | 9.20         | 9.24         | 114.24        |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 24.45        | 23.11        | 27.75        | 24.41        | 26.65        | 26.24        | 23.97        | 27.15        | 24.34        | 25.59        | 24.34        | 24.45        | 302.44        |
| <b>Total</b>  | <b>53.54</b> | <b>47.45</b> | <b>53.21</b> | <b>47.95</b> | <b>59.56</b> | <b>68.09</b> | <b>74.52</b> | <b>80.12</b> | <b>61.76</b> | <b>55.23</b> | <b>47.73</b> | <b>50.44</b> | <b>699.61</b> |

**Gas Consumption (Btu x000,000,000)**

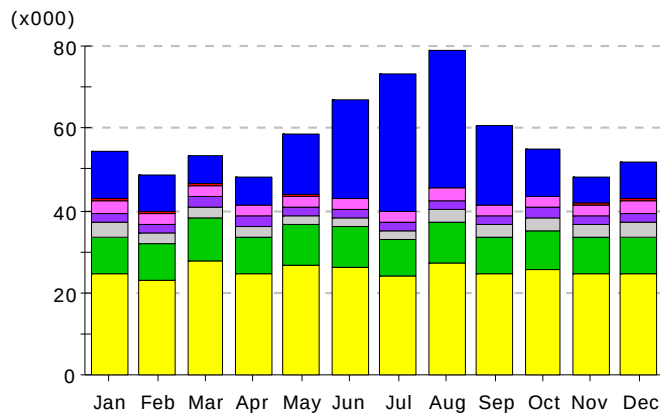
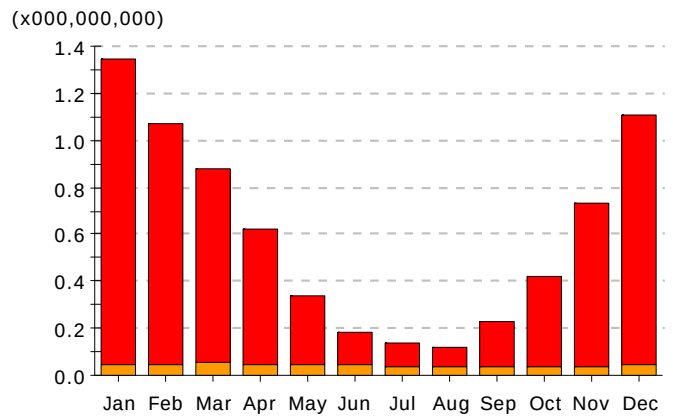
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total       |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Space Heat    | 1.26        | 0.99        | 0.80        | 0.53        | 0.25        | 0.09        | 0.06        | 0.04        | 0.14        | 0.35        | 0.66        | 1.02        | 6.17        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Hot Water     | 0.05        | 0.04        | 0.05        | 0.05        | 0.05        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.51        |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| <b>Total</b>  | <b>1.30</b> | <b>1.03</b> | <b>0.85</b> | <b>0.58</b> | <b>0.30</b> | <b>0.14</b> | <b>0.09</b> | <b>0.08</b> | <b>0.18</b> | <b>0.38</b> | <b>0.70</b> | <b>1.06</b> | <b>6.68</b> |

**Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 12.29        | 9.43         | 7.78         | 7.66         | 16.43        | 25.75        | 35.15        | 34.85        | 20.75        | 12.47        | 6.92         | 9.35         | 198.82        |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 0.52         | 0.42         | 0.35         | 0.26         | 0.16         | 0.09         | 0.06         | 0.05         | 0.11         | 0.20         | 0.30         | 0.44         | 2.96          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 3.16         | 2.77         | 2.87         | 2.64         | 2.81         | 2.70         | 2.71         | 2.95         | 2.76         | 2.67         | 2.68         | 2.99         | 33.71         |
| Pumps & Aux.  | 1.75         | 1.52         | 1.50         | 1.24         | 1.00         | 0.90         | 0.91         | 0.91         | 0.92         | 1.08         | 1.33         | 1.67         | 14.73         |
| Ext. Usage    | 3.19         | 2.45         | 2.71         | 2.63         | 1.88         | 1.82         | 1.88         | 3.05         | 2.95         | 3.05         | 3.09         | 3.19         | 31.89         |
| Misc. Equip.  | 9.24         | 8.74         | 10.48        | 9.23         | 10.07        | 9.91         | 9.04         | 10.23        | 9.20         | 9.67         | 9.20         | 9.24         | 114.24        |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 24.45        | 23.11        | 27.75        | 24.41        | 26.65        | 26.24        | 23.97        | 27.15        | 24.34        | 25.59        | 24.34        | 24.45        | 302.44        |
| <b>Total</b>  | <b>54.61</b> | <b>48.44</b> | <b>53.44</b> | <b>48.06</b> | <b>58.99</b> | <b>67.39</b> | <b>73.72</b> | <b>79.19</b> | <b>61.03</b> | <b>54.73</b> | <b>47.86</b> | <b>51.33</b> | <b>698.80</b> |

**Gas Consumption (Btu x000,000,000)**

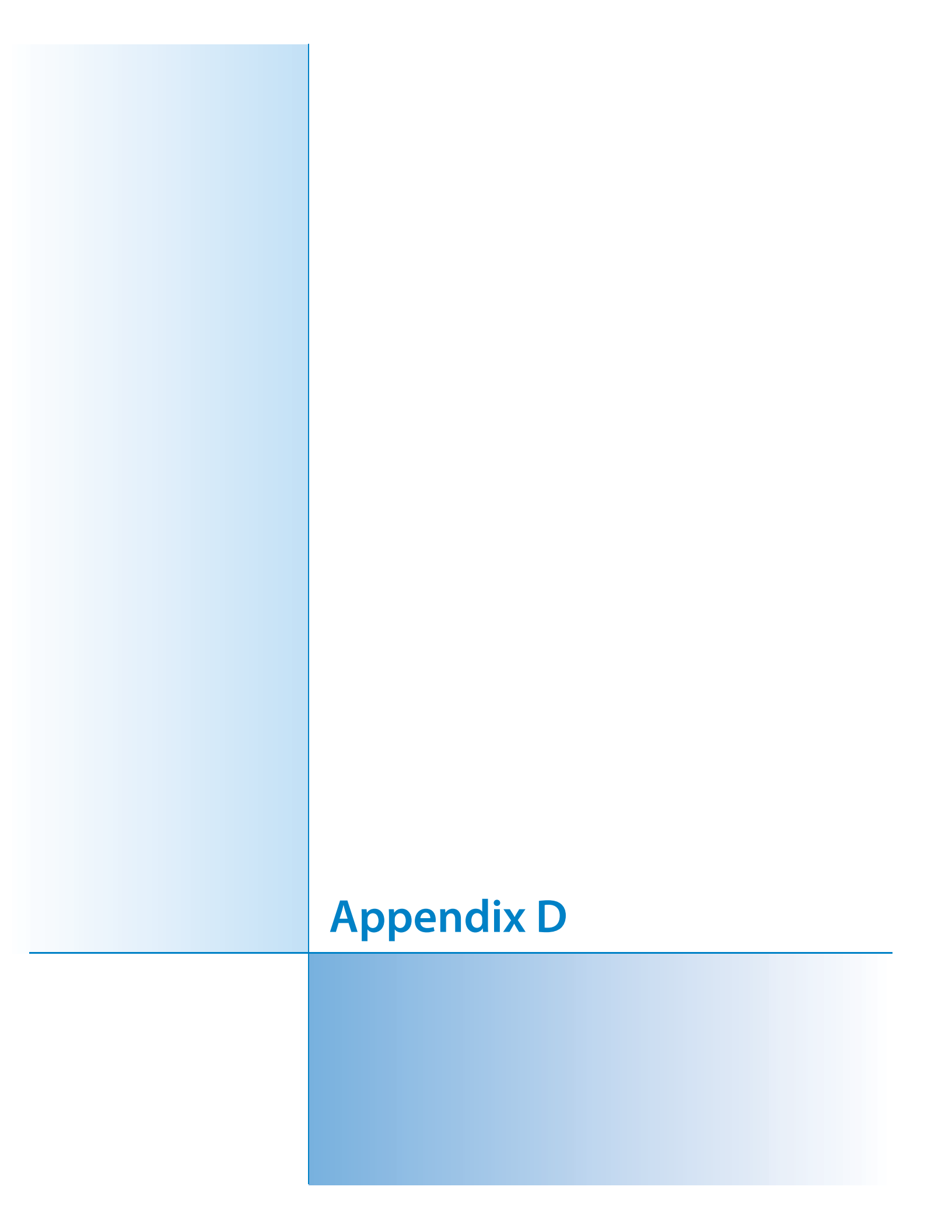
|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total       |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Space Heat    | 1.35        | 1.07        | 0.87        | 0.61        | 0.32        | 0.15        | 0.11        | 0.08        | 0.21        | 0.41        | 0.73        | 1.11        | 7.01        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Hot Water     | 0.05        | 0.04        | 0.05        | 0.05        | 0.05        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.51        |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| <b>Total</b>  | <b>1.39</b> | <b>1.11</b> | <b>0.92</b> | <b>0.65</b> | <b>0.36</b> | <b>0.19</b> | <b>0.15</b> | <b>0.12</b> | <b>0.24</b> | <b>0.45</b> | <b>0.77</b> | <b>1.15</b> | <b>7.52</b> |

**Electric Consumption (kWh)****Gas Consumption (Btu)****Electric Consumption (kWh x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 11.70        | 8.98         | 6.98         | 6.81         | 15.12        | 24.12        | 33.40        | 33.31        | 19.27        | 11.32        | 6.20         | 8.89         | 186.11        |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 0.51         | 0.41         | 0.33         | 0.25         | 0.15         | 0.08         | 0.06         | 0.04         | 0.11         | 0.19         | 0.29         | 0.42         | 2.83          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 3.13         | 2.75         | 2.82         | 2.60         | 2.76         | 2.67         | 2.67         | 2.93         | 2.72         | 2.62         | 2.64         | 2.97         | 33.28         |
| Pumps & Aux.  | 2.31         | 2.11         | 2.36         | 2.23         | 2.19         | 2.10         | 2.17         | 2.17         | 2.10         | 2.23         | 2.25         | 2.35         | 26.57         |
| Ext. Usage    | 3.19         | 2.45         | 2.71         | 2.63         | 1.88         | 1.82         | 1.88         | 3.05         | 2.95         | 3.05         | 3.09         | 3.19         | 31.89         |
| Misc. Equip.  | 9.24         | 8.74         | 10.48        | 9.23         | 10.07        | 9.91         | 9.04         | 10.23        | 9.20         | 9.67         | 9.20         | 9.24         | 114.24        |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 24.45        | 23.11        | 27.75        | 24.41        | 26.65        | 26.24        | 23.97        | 27.15        | 24.34        | 25.59        | 24.34        | 24.45        | 302.44        |
| <b>Total</b>  | <b>54.54</b> | <b>48.54</b> | <b>53.43</b> | <b>48.15</b> | <b>58.82</b> | <b>66.93</b> | <b>73.19</b> | <b>78.88</b> | <b>60.69</b> | <b>54.67</b> | <b>48.00</b> | <b>51.51</b> | <b>697.36</b> |

**Gas Consumption (Btu x000,000,000)**

|               | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct         | Nov         | Dec         | Total       |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Space Cool    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Heat Reject.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Refrigeration | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Space Heat    | 1.30        | 1.03        | 0.83        | 0.57        | 0.30        | 0.14        | 0.10        | 0.08        | 0.19        | 0.39        | 0.69        | 1.06        | 6.67        |
| HP Supp.      | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Hot Water     | 0.05        | 0.04        | 0.05        | 0.05        | 0.05        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.51        |
| Vent. Fans    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Pumps & Aux.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Ext. Usage    | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Misc. Equip.  | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Task Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| Area Lights   | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| <b>Total</b>  | <b>1.34</b> | <b>1.07</b> | <b>0.88</b> | <b>0.62</b> | <b>0.34</b> | <b>0.18</b> | <b>0.14</b> | <b>0.11</b> | <b>0.23</b> | <b>0.42</b> | <b>0.73</b> | <b>1.11</b> | <b>7.18</b> |

The graphic consists of a large light blue rectangle on the left side of the page. A horizontal line extends from the right edge of this rectangle across the page. A vertical line extends from the bottom of the light blue rectangle down to the bottom of the page. The intersection of these two lines is where the text 'Appendix D' is located. The text is in a bold, dark blue font. The area to the right of the vertical line and below the horizontal line is a solid dark blue rectangle.

## Appendix D

Appendix D - Lighting Upgrades

| Building                             | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                                          | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|--------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|------------------------------------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|-------|
| Central Elementary School - Interior | 001   | BOILER ROOM     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 10                       | 507                    | 0.507       | 500             | 253.5        | \$38.0                      | None Proposed                                                          | 10                       | 507                    | 0.507            | 500                                        | 350                                     | 253.5                        | 177.45                    | None Proposed                    | 0                         | 0              | 76.05           | 11.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | NURSE           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 7                        | 354.9                  | 0.3549      | 3380            | 1199.562     | \$179.9                     | None Proposed                                                          | 7                        | 354.9                  | 0.3549           | 3380                                       | 2366                                    | 1199.562                     | 839.6934                  | None Proposed                    | 0                         | 0              | 359.8686        | 54.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | MULTI PURPOSE   | 400W Metal Halide Fixtures                        | 16                       | 7328                   | 7.328       | 3380            | 24768.64     | \$3,715.3                   | Replace Metal Halide Fixtures with 6-Lamp Fluorescent Highway Fixtures | 16                       | 3616                   | 3.616            | 3380                                       | 2366                                    | 12222.08                     | 8555.456                  | None Proposed                    | 0                         | 3.712          | 16213.184       | 2,432.0             | \$0.0                                    | \$185.0               | \$133.0                | \$0.0                             | \$0.0                                   | \$2,128.0   | \$2,960.0       | \$5,088.0               |       |
| Central Elementary School - Interior | 001   | MULTI PURPOSE   | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                                          | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | None Proposed                    | 0                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                                          | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | None Proposed                    | 0                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | MUSIC           | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                                          | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | MUSIC           | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                                          | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | None Proposed                    | 0                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | ART             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                                          | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | KILN            | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | CLOSET          | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | CAFETERIA       | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 28                       | 1419.6                 | 1.4196      | 3380            | 4798.248     | \$719.7                     | None Proposed                                                          | 28                       | 1419.6                 | 1.4196           | 3380                                       | 2366                                    | 4798.248                     | 3358.7736                 | None Proposed                    | 0                         | 0              | 1439.4744       | 215.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 002   | STORAGE         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 22                       | 1115.4                 | 1.1154      | 500             | 557.7        | \$83.7                      | None Proposed                                                          | 22                       | 1115.4                 | 1.1154           | 500                                        | 350                                     | 557.7                        | 390.39                    | None Proposed                    | 0                         | 0              | 167.31          | 25.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | STAIRWELL       | 26W CFL Fixture                                   | 2                        | 52                     | 0.052       | 3380            | 175.76       | \$26.4                      | None Proposed                                                          | 2                        | 52                     | 0.052            | 3380                                       | 2366                                    | 175.76                       | 123.032                   | None Proposed                    | 0                         | 0              | 52.728          | 7.9                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | HALLWAY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 117             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                                          | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 115             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 8                        | 704                    | 0.704       | 3380            | 2379.52      | \$356.9                     | None Proposed                                                          | 8                        | 704                    | 0.704            | 3380                                       | 2366                                    | 2379.52                      | 1665.664                  | None Proposed                    | 0                         | 0              | 713.856         | 107.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 112             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 15                       | 1320                   | 1.32        | 3380            | 4461.6       | \$669.2                     | None Proposed                                                          | 15                       | 1320                   | 1.32             | 3380                                       | 2366                                    | 4461.6                       | 3123.12                   | None Proposed                    | 0                         | 0              | 1338.48         | 200.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | COMPUTER LAB    | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 16                       | 811.2                  | 0.8112      | 3380            | 2741.856     | \$411.3                     | None Proposed                                                          | 16                       | 811.2                  | 0.8112           | 3380                                       | 2366                                    | 2741.856                     | 1919.2992                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 822.5568        | 123.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | LIBRARY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 110                      | 5577                   | 5.577       | 3380            | 18850.26     | \$2,827.5                   | None Proposed                                                          | 110                      | 5577                   | 5.577            | 3380                                       | 2366                                    | 18850.26                     | 13195.182                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 5655.078        | 848.3               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | LIBRARY         | 60W Incandescent Fixture                          | 2                        | 120                    | 0.12        | 3380            | 405.6        | \$60.8                      | Replace 60W Incandescent Fixture with 13W CFL                          | 2                        | 26                     | 0.026            | 3380                                       | 2366                                    | 87.88                        | 61.516                    | None Proposed                    | 0                         | 0.094          | 344.084         | 51.6                | \$0.0                                    | \$6.3                 | \$4.0                  | \$0.0                             | \$0.0                                   | \$8.0       | \$12.5          | \$20.5                  |       |
| Central Elementary School - Interior | 001   | LIBRARY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | LIBRARY         | 26W CFL Fixture                                   | 27                       | 702                    | 0.702       | 3380            | 2372.76      | \$355.9                     | None Proposed                                                          | 27                       | 702                    | 0.702            | 3380                                       | 2366                                    | 2372.76                      | 1660.932                  | None Proposed                    | 0                         | 0              | 711.828         | 106.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | LIBRARY         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 7                        | 616                    | 0.616       | 3380            | 2082.08      | \$312.3                     | None Proposed                                                          | 7                        | 616                    | 0.616            | 3380                                       | 2366                                    | 2082.08                      | 1457.456                  | None Proposed                    | 0                         | 0              | 624.624         | 93.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 117             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 8                        | 704                    | 0.704       | 3380            | 2379.52      | \$356.9                     | None Proposed                                                          | 8                        | 704                    | 0.704            | 3380                                       | 2366                                    | 2379.52                      | 1665.664                  | None Proposed                    | 0                         | 0              | 713.856         | 107.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 118             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 8                        | 704                    | 0.704       | 3380            | 2379.52      | \$356.9                     | None Proposed                                                          | 8                        | 704                    | 0.704            | 3380                                       | 2366                                    | 2379.52                      | 1665.664                  | None Proposed                    | 0                         | 0              | 713.856         | 107.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | ELECTRICAL      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | BATHROOM        | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 151             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$133.8                     | None Proposed                                                          | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 267.696         | 40.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 150             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 152             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 149             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | HALLWAY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 153             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 148             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Central Elementary School - Interior | 001   | 154             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 155             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 156             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | MAIN OFFICE     | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 9                        | 456.3                  | 0.4563      | 3380            | 1542.294     | \$231.3                     | None Proposed                                                          | 9                        | 456.3                  | 0.4563           | 3380                                       | 2366                                    | 1542.294                     | 1079.6058                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 462.6882        | 69.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | 138             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$133.8                     | None Proposed                                                          | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 267.696         | 40.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 001   | PRINCIPAL       | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic          |                          |                        |             |                 |              |                             |                                                                        |                          |                        |                  |                                            |                                         |                              |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                         |             |                 |                         |       |



Appendix D - Lighting Upgrades

| Building                             | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                 | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|--------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|-----------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|-------|
| Central Elementary School - Interior | 002   | 216             | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                 | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 215             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 201             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 214             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 202             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 213             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 203             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 219             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | CLOSET          | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$77.5      | \$109.3         | \$186.8                 |       |
| Central Elementary School - Interior | 002   | 212             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | MENS BATHROOM   | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 204             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 205             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 206             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 207             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | GIRLS BATHROOM  | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 211             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$205.6                     | None Proposed                                 | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 411.2784        | 61.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 208             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 210             | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 9                        | 456.3                  | 0.4563      | 3380            | 1542.294     | \$231.3                     | None Proposed                                 | 9                        | 456.3                  | 0.4563           | 3380                                       | 2366                                    | 1542.294                     | 1079.6058                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 462.6882        | 69.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | 209             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Central Elementary School - Interior | 002   | STAIRWELL       | 60W Incandescent Fixture                          | 6                        | 360                    | 0.36        | 3380            | 1216.8       | \$182.5                     | Replace 60W Incandescent Fixture with 13W CFL | 6                        | 78                     | 0.078            | 3380                                       | 2366                                    | 263.64                       | 184.548                   | Ceiling Mounted Occupancy Sensor | 1                         | 0.282          | 1032.252        | 154.8               | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$97.5      | \$140.5         | \$238.0                 |       |
| Wall Intermediate School - Interior  | 001   | 110             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                 | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | 109             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                 | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | LIBRARY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 49                       | 2484.3                 | 2.4843      | 3380            | 8396.934     | \$1,175.6                   | None Proposed                                 | 49                       | 2484.3                 | 2.4843           | 3380                                       | 2366                                    | 8396.934                     | 5877.8538                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 2519.0802       | 352.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | LIBRARY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$191.9                     | None Proposed                                 | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 411.2784        | 57.6                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | LIBRARY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | 108             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                 | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | 107             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                 | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | STORAGE         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 500             | 76.05        | \$10.6                      | None Proposed                                 | 3                        | 152.1                  | 0.1521           | 500                                        | 350                                     | 76.05                        | 53.235                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 22.815          | 3.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$287.9                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 86.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | 106             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$249.8                     | None Proposed                                 | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | None Proposed                    | 0                         | 0              | 535.392         | 75.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |       |
| Wall Intermediate School - Interior  | 001   | 105             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$249.8                     | None Proposed                                 | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 535.392         | 75.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | AUDITORIUM      | 26W CFL Fixture                                   | 45                       | 1170                   | 1.17        | 3380            | 3954.6       | \$553.6                     | None Proposed                                 | 45                       | 1170                   | 1.17             | 3380                                       | 2366                                    | 3954.6                       | 2768.22                   | None Proposed                    | 0                         | 0              | 1186.38         | 166.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |       |
| Wall Intermediate School - Interior  | 001   | 104             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                 | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | None Proposed                    | 0                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |       |
| Wall Intermediate School - Interior  | 001   | BOYS ROOM       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$14.2                      | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | None Proposed                    | 0                         | 0              | 30.42           | 4.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior  | 001   | GIRLS ROOM      | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$14.2                      | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | None Proposed                    | 0                         | 0              | 30.42           | 4.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior  | 001   | MUSIC           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 17                       | 1496                   | 1.496       | 3380            | 5056.48      | \$707.9                     | None Proposed                                 | 17                       | 1496                   | 1.496            | 3380                                       | 2366                                    | 5056.48                      | 3539.536                  | None Proposed                    | 0                         | 0              | 1516.944        | 212.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior  | 001   | MUSIC           | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior  | 001   | MUSIC           | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$96.0                      | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 28.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior  | 001   | 103             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                 | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               |                                          |                       |                        |                                   |                                         |             |                 |                         |       |

Appendix D - Lighting Upgrades

| Building                            | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                  | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|-------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|------------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|-------|
| Wall Intermediate School - Interior | 001   | 203             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                  | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | GIRLS           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.5                       | None Proposed                                  | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | GIRLS           | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.5                       | None Proposed                                  | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | STAGE           | 100W Incandescent Fixture                         | 7                        | 700                    | 0.7         | 3380            | 2366         | \$331.2                     | Replace 100W Incandescent Fixture with 25W CFL | 7                        | 175                    | 0.175            | 3380                                       | 2366                                    | 591.5                        | 414.05                    | Ceiling Mounted Occupancy Sensor | 1                         | 0.525          | 1951.95         | 273.3               | \$0.0                                    | \$7.0                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$101.5     | \$152.0         | \$253.5                 |       |
| Wall Intermediate School - Interior | 001   | 204             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                  | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 205             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                  | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | STORAGE         | 1X4 Fixtures w/ 2-T9 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$14.2                      | None Proposed                                  | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 30.42           | 4.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 207             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$83.3                      | None Proposed                                  | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 178.464         | 25.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 206             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                  | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 208             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                  | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 209             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                  | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 210             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$249.8                     | None Proposed                                  | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 535.392         | 75.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 211             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$249.8                     | None Proposed                                  | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 535.392         | 75.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | STORAGE         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                  | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | PTA STORAGE     | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.2                       | Replace 60W Incandescent Fixture with 13W CFL  | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 25.45           | 3.6                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$77.5      | \$109.3         | \$186.8                 |       |
| Wall Intermediate School - Interior | 001   | 601             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 500             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$287.9                     | None Proposed                                  | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 86.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 501             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 502             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 503             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | BOYS ROOM       | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.1                       | None Proposed                                  | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | BOYS ROOM       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.5                       | None Proposed                                  | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | GIRLS ROOM      | 2X4 Fixtures w/ 3-T9 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 500             | 88           | \$12.3                      | None Proposed                                  | 2                        | 176                    | 0.176            | 500                                        | 350                                     | 88                           | 61.6                      | None Proposed                    | 0                         | 0              | 26.4            | 3.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | GIRLS ROOM      | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 1                        | 88                     | 0.088       | 500             | 44           | \$6.2                       | None Proposed                                  | 1                        | 88                     | 0.088            | 500                                        | 350                                     | 44                           | 30.8                      | None Proposed                    | 0                         | 0              | 13.2            | 1.8                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 300             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 20                       | 1760                   | 1.76        | 3380            | 5948.8       | \$832.8                     | None Proposed                                  | 20                       | 1760                   | 1.76             | 3380                                       | 2366                                    | 5948.8                       | 4164.16                   | None Proposed                    | 0                         | 0              | 1784.64         | 249.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | ITV             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$124.9                     | None Proposed                                  | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | None Proposed                    | 0                         | 0              | 267.696         | 37.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 301             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 302             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 303             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 304             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 306             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 305             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 307             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 308             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 17                       | 861.9                  | 0.8619      | 3380            | 2913.222     | \$407.9                     | None Proposed                                  | 17                       | 861.9                  | 0.8619           | 3380                                       | 2366                                    | 2913.222                     | 2039.2554                 | None Proposed                    | 0                         | 0              | 873.9666        | 122.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | CUSTODIAN       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.1                       | None Proposed                                  | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 309             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 310             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$499.7                     | None Proposed                                  | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 149.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | ITV             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$124.9                     | None Proposed                                  | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | None Proposed                    | 0                         | 0              | 267.696         | 37.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | ELECTRICAL      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.1                       | None Proposed                                  | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 5                            |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                         |             |                 |                         |       |

Appendix D - Lighting Upgrades

| Building                            | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                                          | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|-------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|------------------------------------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|-------|
| Wall Intermediate School - Interior | 001   | GYM             | 400W Metal Halide Fixtures                        | 39                       | 17862                  | 17.862      | 3380            | 60373.56     | \$8,452.3                   | Replace Metal Halide Fixtures with 6-Lamp Fluorescent Highbay Fixtures | 39                       | 8814                   | 8.814            | 3380                                       | 2366                                    | 29791.32                     | 20853.924                 | None Proposed                    | 0                         | 9.048          | 39519.636       | 5,532.7             | \$0.0                                    | \$185.0               | \$133.0                | \$0.0                             | \$0.0                                   | \$5,187.0   | \$7,215.0       | \$12,402.0              |       |
| Wall Intermediate School - Interior | 001   | GIRLS LOCKER    | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$359.9                     | None Proposed                                                          | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | None Proposed                    | 0                         | 0              | 771.147         | 108.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | GIRLS LOCKER    | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | GIRLS LOCKER    | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 702             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$287.9                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 86.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 701             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$287.9                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 86.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | BATHROOM        | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.5                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | AUX GYM         | 400W Metal Halide Fixtures                        | 16                       | 7328                   | 7.328       | 3380            | 24768.64     | \$3,467.6                   | Replace Metal Halide Fixtures with 6-Lamp Fluorescent Highbay Fixtures | 16                       | 3616                   | 3.616            | 3380                                       | 2366                                    | 12222.08                     | 8555.456                  | None Proposed                    | 0                         | 3.712          | 16213.184       | 2,269.8             | \$0.0                                    | \$185.0               | \$133.0                | \$0.0                             | \$0.0                                   | \$2,128.0   | \$2,960.0       | \$5,088.0               |       |
| Wall Intermediate School - Interior | 001   | NURSE OFFICE    | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 7                        | 616                    | 0.616       | 3380            | 2082.08      | \$291.5                     | None Proposed                                                          | 7                        | 616                    | 0.616            | 3380                                       | 2366                                    | 2082.08                      | 1457.456                  | None Proposed                    | 0                         | 0              | 624.624         | 87.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | NURSE OFFICE    | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$191.9                     | None Proposed                                                          | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | None Proposed                    | 0                         | 0              | 411.2784        | 57.6                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | NURSE OFFICE    | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | NURSE OFFICE    | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$83.3                      | None Proposed                                                          | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | None Proposed                    | 0                         | 0              | 178.464         | 25.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | NURSE OFFICE    | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$96.0                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 28.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$143.9                     | None Proposed                                                          | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | None Proposed                    | 0                         | 0              | 308.4588        | 43.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | STORAGE         | 26W CFL Fixture                                   | 1                        | 26                     | 0.026       | 3380            | 87.88        | \$12.3                      | None Proposed                                                          | 1                        | 26                     | 0.026            | 3380                                       | 2366                                    | 87.88                        | 61.516                    | None Proposed                    | 0                         | 0              | 26.364          | 3.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 802             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 30                       | 1521                   | 1.521       | 3380            | 5140.98      | \$719.7                     | None Proposed                                                          | 30                       | 1521                   | 1.521            | 3380                                       | 2366                                    | 5140.98                      | 3598.686                  | None Proposed                    | 0                         | 0              | 1542.294        | 215.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$191.9                     | None Proposed                                                          | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | None Proposed                    | 0                         | 0              | 411.2784        | 57.6                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 803             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 53                       | 2687.1                 | 2.6871      | 3380            | 9082.398     | \$1,271.5                   | None Proposed                                                          | 53                       | 2687.1                 | 2.6871           | 3380                                       | 2366                                    | 9082.398                     | 6357.6786                 | None Proposed                    | 0                         | 0              | 2724.7194       | 381.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | 803             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 1X4 Fixtures w/ 1-T8 Lamps w/ Electronic Ballasts | 24                       | 609.6                  | 0.6096      | 3380            | 2060.448     | \$288.5                     | None Proposed                                                          | 24                       | 609.6                  | 0.6096           | 3380                                       | 2366                                    | 2060.448                     | 1442.3136                 | None Proposed                    | 0                         | 0              | 618.1344        | 86.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BOYS LOCKER     | 26W CFL Fixture                                   | 1                        | 26                     | 0.026       | 3380            | 87.88        | \$12.3                      | None Proposed                                                          | 1                        | 26                     | 0.026            | 3380                                       | 2366                                    | 87.88                        | 61.516                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 26.364          | 3.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$143.9                     | None Proposed                                                          | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 43.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | BATHROOM        | 26W CFL Fixture                                   | 2                        | 52                     | 0.052       | 500             | 26           | \$3.6                       | None Proposed                                                          | 2                        | 52                     | 0.052            | 500                                        | 350                                     | 26                           | 18.2                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.8             | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 320             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$374.8                     | None Proposed                                                          | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 803.088         | 112.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 321             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 25                       | 1267.5                 | 1.2675      | 3380            | 4284.15      | \$599.8                     | None Proposed                                                          | 25                       | 1267.5                 | 1.2675           | 3380                                       | 2366                                    | 4284.15                      | 2998.905                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1285.245        | 179.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 322             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$374.8                     | None Proposed                                                          | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 803.088         | 112.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 323             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$249.8                     | None Proposed                                                          | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 535.392         | 75.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 319             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$374.8                     | None Proposed                                                          | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 803.088         | 112.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 10                       | 507                    | 0.507       | 3380            | 1713.66      | \$239.9                     | None Proposed                                                          | 10                       | 507                    | 0.507            | 3380                                       | 2366                                    | 1713.66                      | 1199.562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 514.098         | 72.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 318             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$374.8                     | None Proposed                                                          | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 803.088         | 112.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 317             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$374.8                     | None Proposed                                                          | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 803.088         | 112.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | CUSTODIAN       | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 9                        | 456.3                  | 0.4563      | 500             | 228.15       | \$31.9                      | None Proposed                                                          | 9                        | 456.3                  | 0.4563           | 500                                        | 350                                     | 228.15                       | 159.705                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 68.445          | 9.6                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall Intermediate School - Interior | 001   | 801/802         | 2X4 Fixtures w/                                   |                          |                        |             |                 |              |                             |                                                                        |                          |                        |                  |                                            |                                         |                              |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                         |             |                 |                         |       |

Appendix D - Lighting Upgrades

| Building                            | Floor | Location/Room #  | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                                          | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |
|-------------------------------------|-------|------------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|------------------------------------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|
| Wall Intermediate School - Interior | 001   | HALLWAY          | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$287.9                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 86.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$287.9                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 86.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$96.0                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 28.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$96.0                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 28.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$96.0                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 28.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$24.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$96.0                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 28.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 5                        | 253.5                  | 0.2535      | 3380            | 856.83       | \$120.0                     | None Proposed                                                          | 5                        | 253.5                  | 0.2535           | 3380                                       | 2366                                    | 856.83                       | 599.781                   | None Proposed                    | 0                         | 0              | 257.049         | 36.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Interior | 001   | MAIN OFFICE      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$48.0                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 14.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall Intermediate School - Exterior | 001   | EXTERIOR         | Exterior Wall Packs (Assume 70w)                  | 30                       | 2700                   | 2.7         | 4368            | 11793.6      | \$1,651.1                   | Replace 70W Fixture with LED Fixture                                   | 30                       | 1320                   | 1.32             | 4368                                       | 3057.6                                  | 5765.76                      | 4036.032                  | None Proposed                    | 0                         | 1.38           | 7757.568        | 1,086.1             | \$0.0                                    | \$380.0               | \$137.0                | \$0.0                             | \$0.0                                   | \$4,110.0   | \$11,400.0      | \$15,510.0              |
| Wall Intermediate School - Exterior | 001   | EXTERIOR         | 250W MH Fixture                                   | 18                       | 5130                   | 5.13        | 4368            | 22407.84     | \$3,137.1                   | Replace 250W Fixture with LED Fixture                                  | 18                       | 1980                   | 1.98             | 4368                                       | 3057.6                                  | 8648.64                      | 6054.048                  | None Proposed                    | 0                         | 3.15           | 16353.792       | 2,289.5             | \$0.0                                    | \$390.0               | \$137.0                | \$0.0                             | \$0.0                                   | \$2,466.0   | \$7,020.0       | \$9,486.0               |
| Wall High School - Interior         | 001   | BOILER ROOM      | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 13                       | 659.1                  | 0.6591      | 500             | 329.55       | \$49.4                      | None Proposed                                                          | 13                       | 659.1                  | 0.6591           | 500                                        | 350                                     | 329.55                       | 230.685                   | None Proposed                    | 0                         | 0              | 98.865          | 14.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | ELECTRICAL ROOM  | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | BOILER ROOM      | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 5000            | 253.5        | \$38.0                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 5000                                       | 3500                                    | 253.5                        | 177.45                    | None Proposed                    | 0                         | 0              | 76.05           | 11.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | BATHROOM         | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL                          | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | None Proposed                    | 0                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$0.0                             | \$0.0                                   | \$4.0       | \$6.3           | \$10.3                  |
| Wall High School - Interior         | 001   | MAINTENANCE ROOM | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 500             | 152.1        | \$22.8                      | None Proposed                                                          | 6                        | 304.2                  | 0.3042           | 500                                        | 350                                     | 152.1                        | 106.47                    | None Proposed                    | 0                         | 0              | 45.63           | 6.8                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | KITCHEN          | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 27                       | 1368.9                 | 1.3689      | 3380            | 4626.882     | \$694.0                     | None Proposed                                                          | 27                       | 1368.9                 | 1.3689           | 3380                                       | 2366                                    | 4626.882                     | 3238.8174                 | None Proposed                    | 0                         | 0              | 1388.0646       | 208.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | KITCHEN          | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | KITCHEN          | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | OFFICE           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | CAFETERIA        | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 36                       | 1825.2                 | 1.8252      | 3380            | 6169.176     | \$925.4                     | None Proposed                                                          | 36                       | 1825.2                 | 1.8252           | 3380                                       | 2366                                    | 6169.176                     | 4318.4232                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1850.7528       | 277.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | CAFETERIA        | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 24                       | 2112                   | 2.112       | 3380            | 7138.56      | \$1,070.8                   | None Proposed                                                          | 24                       | 2112                   | 2.112            | 3380                                       | 2366                                    | 7138.56                      | 4996.992                  | None Proposed                    | 0                         | 0              | 2141.568        | 321.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | CAFETERIA        | 26W CFL Fixture                                   | 10                       | 260                    | 0.26        | 3380            | 878.8        | \$131.8                     | None Proposed                                                          | 10                       | 260                    | 0.26             | 3380                                       | 2366                                    | 878.8                        | 615.16                    | None Proposed                    | 0                         | 0              | 263.64          | 39.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | KITCHEN          | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                                          | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | None Proposed                    | 0                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | OLD GYM          | 400W Metal Halide Fixtures                        | 30                       | 13740                  | 13.74       | 3380            | 46441.2      | \$6,966.2                   | Replace Metal Halide Fixtures with 6-Lamp Fluorescent Highbay Fixtures | 30                       | 6780                   | 6.78             | 3380                                       | 2366                                    | 22916.4                      | 16041.48                  | None Proposed                    | 0                         | 6.96           | 30399.72        | 4,560.0             | \$0.0                                    | \$185.0               | \$133.0                | \$0.0                             | \$0.0                                   | \$3,990.0   | \$5,550.0       | \$9,540.0               |
| Wall High School - Interior         | 001   | HALLWAY          | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 15                       | 1320                   | 1.32        | 3380            | 4461.6       | \$669.2                     | None Proposed                                                          | 15                       | 1320                   | 1.32             | 3380                                       | 2366                                    | 4461.6                       | 3123.12                   | None Proposed                    | 0                         | 0              | 1338.48         | 200.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | HALLWAY          | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 15                       | 1320                   | 1.32        | 3380            | 4461.6       | \$669.2                     | None Proposed                                                          | 15                       | 1320                   | 1.32             | 3380                                       | 2366                                    | 4461.6                       | 3123.12                   | None Proposed                    | 0                         | 0              | 1338.48         | 200.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | HALLWAY          | 26W CFL Fixture                                   | 15                       | 390                    | 0.39        | 3380            | 1318.2       | \$197.7                     | None Proposed                                                          | 15                       | 390                    | 0.39             | 3380                                       | 2366                                    | 1318.2                       | 922.74                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 395.46          | 59.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | LOCKER ROOMS     | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 5                        | 440                    | 0.44        | 3380            | 1487.2       | \$223.1                     | None Proposed                                                          | 5                        | 440                    | 0.44             | 3380                                       | 2366                                    | 1487.2                       | 1041.04                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 446.16          | 66.9                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | LOCKER ROOMS     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 19                       | 963.3                  | 0.9633      | 3380            | 3255.954     | \$488.4                     | None Proposed                                                          | 19                       | 963.3                  | 0.9633           | 3380                                       | 2366                                    | 3255.954                     | 2279.1678                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 976.7862        | 146.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | LOCKER ROOMS     | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$133.8                     | None Proposed                                                          | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 267.696         | 40.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | AUX GYM          | 400W Metal Halide Fixtures                        | 24                       | 10992                  | 10.992      | 3380            | 37152.96     | \$5,572.9                   | Replace Metal Halide Fixtures with 6-Lamp Fluorescent Highbay Fixtures | 24                       | 5424                   | 5.424            | 3380                                       | 2366                                    | 18333.12                     | 12833.184                 | Ceiling Mounted Occupancy Sensor | 1                         | 5.568          | 24319.776       | 3,648.0             | \$0.0                                    | \$185.0               | \$133.0                | \$103.0                           | \$73.5                                  | \$3,265.5   | \$4,543.0       | \$7,808.5               |
| Wall High School - Interior         | 001   | GIRLS LOCKER     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 19                       | 963.3                  | 0.9633      | 3380            | 3255.954     | \$488.4                     | None Proposed                                                          | 19                       | 963.3                  | 0.9633           | 3380                                       | 2366                                    | 3255.954                     | 2279.1678                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 976.7862        | 146.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior         | 001   | GIRLS LOCKER     | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$133.8                     | None Proposed                                                          | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | None Proposed                    | 0                         | 0              | 267.696         | 40.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | GIRLS LOCKER     | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                                          | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | None Proposed                    | 0                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | GIRLS LOCKER     | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 4                        | 352                    | 0.352       | 3380            | 1189.76      | \$178.5                     | None Proposed                                                          | 4                        | 352                    | 0.352            | 3380                                       | 2366                                    | 1189.76                      | 832.832                   | None Proposed                    | 0                         | 0              | 356.928         | 53.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior         | 001   | GIRLS LOCKER     | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                                          | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$10            |                         |



## Appendix D - Lighting Upgrades

| Building                    | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                 | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|-----------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|-----------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|-------|
| Wall High School - Interior | 001   | E9              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E10             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | OFFICE          | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                 | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E7              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                 | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E8              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E5              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E6              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E4              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E3              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E1              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 8                        | 704                    | 0.704       | 3380            | 2379.52      | \$356.9                     | None Proposed                                 | 8                        | 704                    | 0.704            | 3380                                       | 2366                                    | 2379.52                      | 1665.664                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 713.856         | 107.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | E23             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 8                        | 704                    | 0.704       | 3380            | 2379.52      | \$356.9                     | None Proposed                                 | 8                        | 704                    | 0.704            | 3380                                       | 2366                                    | 2379.52                      | 1665.664                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 713.856         | 107.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C14             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C15             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C12             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C13             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | CUSTODIAN       | 60W Incandescent Fixture                          | 2                        | 120                    | 0.12        | 500             | 60           | \$9.0                       | Replace 60W Incandescent Fixture with 13W CFL | 2                        | 26                     | 0.026            | 500                                        | 350                                     | 13                           | 9.1                       | Ceiling Mounted Occupancy Sensor | 1                         | 0.094          | 50.9            | 7.6                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$81.5      | \$115.5         | \$197.0                 |       |
| Wall High School - Interior | 001   | C11             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | BOYS BATHROOM   | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | WOMENS BATHROOM | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$133.8                     | None Proposed                                 | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 267.696         | 40.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | HALLWAY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | HALLWAY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C10             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C9              | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C8              | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Wall High School - Interior | 001   | C7              | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | C6              | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | C5              | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                 | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | HALLWAY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | C4              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$401.5                     | None Proposed                                 | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | None Proposed                    | 0                         | 0              | 803.088         | 120.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | C3              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$401.5                     | None Proposed                                 | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | None Proposed                    | 0                         | 0              | 803.088         | 120.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | C2              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$401.5                     | None Proposed                                 | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | None Proposed                    | 0                         | 0              | 803.088         | 120.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | C1              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 9                        | 792                    | 0.792       | 3380            | 2676.96      | \$401.5                     | None Proposed                                 | 9                        | 792                    | 0.792            | 3380                                       | 2366                                    | 2676.96                      | 1873.872                  | None Proposed                    | 0                         | 0              | 803.088         | 120.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | HALLWAY         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                 | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | None Proposed                    | 0                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | HALLWAY         | 26W CFL Fixture                                   | 2                        | 52                     | 0.052       | 3380            | 175.76       | \$26.4                      | None Proposed                                 | 2                        | 52                     | 0.052            | 3380                                       | 2366                                    | 175.76                       | 123.032                   | None Proposed                    | 0                         | 0              | 52.728          | 7.9                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | HALLWAY         | 26W CFL Fixture                                   | 2                        | 52                     | 0.052       | 3380            | 175.76       | \$26.4                      | None Proposed                                 | 2                        | 52                     | 0.052            | 3380                                       | 2366                                    | 175.76                       | 123.032                   | None Proposed                    | 0                         | 0              | 52.728          | 7.9                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | NURSES OFFICE   | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 16                       | 1408                   | 1.408       | 3380            | 4759.04      | \$713.9                     | None Proposed                                 | 16                       | 1408                   | 1.408            | 3380                                       | 2366                                    | 4759.04                      | 3331.328                  | None Proposed                    | 0                         | 0              | 1427.712        | 214.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | A16             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                 | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | COUNSELOR       | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 3                        | 264                    | 0.264       | 3380            | 892.32       | \$133.8                     | None Proposed                                 | 3                        | 264                    | 0.264            | 3380                                       | 2366                                    | 892.32                       | 624.624                   | None Proposed                    | 0                         | 0              | 267.696         | 40.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | A14             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                 | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Wall High School - Interior | 001   | A13             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.2       |                             |                                               |                          |                        |                  |                                            |                                         |                              |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                         |             |                 |                         |       |



Appendix D - Lighting Upgrades

| Building                               | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                 | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |
|----------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|-----------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|
| Wall High School - Interior            | 001   | AUDITORIUM      | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 35                       | 3080                   | 3.08        | 3380            | 10410.4      | \$1,561.6                   | None Proposed                                 | 35                       | 3080                   | 3.08             | 3380                                       | 2366                                    | 10410.4                      | 7287.28                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 3123.12         | 468.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior            | 001   | STAGE           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 5                        | 253.5                  | 0.2535      | 3380            | 856.83       | \$128.5                     | None Proposed                                 | 5                        | 253.5                  | 0.2535           | 3380                                       | 2366                                    | 856.83                       | 599.781                   | None Proposed                    | 0                         | 0              | 257.049         | 38.6                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A9              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                 | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | None Proposed                    | 0                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | CUSTODIAN       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                 | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | BOYS ROOM       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | BOYS ROOM       | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                 | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | BOYS ROOM       | 26W CFL Fixture                                   | 2                        | 52                     | 0.052       | 500             | 26           | \$3.9                       | None Proposed                                 | 2                        | 52                     | 0.052            | 500                                        | 350                                     | 26                           | 18.2                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.8             | 1.2                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior            | 001   | A8              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                 | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior            | 001   | HALLWAY         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$205.6                     | None Proposed                                 | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | None Proposed                    | 0                         | 0              | 411.2784        | 61.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | HALLWAY         | 26W CFL Fixture                                   | 8                        | 208                    | 0.208       | 3380            | 703.04       | \$105.5                     | None Proposed                                 | 8                        | 208                    | 0.208            | 3380                                       | 2366                                    | 703.04                       | 492.128                   | None Proposed                    | 0                         | 0              | 210.912         | 31.6                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A6              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 18                       | 1584                   | 1.584       | 3380            | 5353.92      | \$803.1                     | None Proposed                                 | 18                       | 1584                   | 1.584            | 3380                                       | 2366                                    | 5353.92                      | 3747.744                  | None Proposed                    | 0                         | 0              | 1606.176        | 240.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A6              | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | KILN            | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 3380            | 594.88       | \$89.2                      | None Proposed                                 | 2                        | 176                    | 0.176            | 3380                                       | 2366                                    | 594.88                       | 416.416                   | None Proposed                    | 0                         | 0              | 178.464         | 26.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | STORAGE         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 500             | 88           | \$13.2                      | None Proposed                                 | 2                        | 176                    | 0.176            | 500                                        | 350                                     | 88                           | 61.6                      | None Proposed                    | 0                         | 0              | 26.4            | 4.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | STORAGE         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 2                        | 176                    | 0.176       | 500             | 88           | \$13.2                      | None Proposed                                 | 2                        | 176                    | 0.176            | 500                                        | 350                                     | 88                           | 61.6                      | None Proposed                    | 0                         | 0              | 26.4            | 4.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A7              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 20                       | 1760                   | 1.76        | 3380            | 5948.8       | \$892.3                     | None Proposed                                 | 20                       | 1760                   | 1.76             | 3380                                       | 2366                                    | 5948.8                       | 4164.16                   | None Proposed                    | 0                         | 0              | 1784.64         | 267.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A5              | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 32                       | 1622.4                 | 1.6224      | 3380            | 5483.712     | \$822.6                     | None Proposed                                 | 32                       | 1622.4                 | 1.6224           | 3380                                       | 2366                                    | 5483.712                     | 3838.5984                 | None Proposed                    | 0                         | 0              | 1645.1136       | 246.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A4              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 20                       | 1760                   | 1.76        | 3380            | 5948.8       | \$892.3                     | None Proposed                                 | 20                       | 1760                   | 1.76             | 3380                                       | 2366                                    | 5948.8                       | 4164.16                   | None Proposed                    | 0                         | 0              | 1784.64         | 267.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | STORAGE         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 4                        | 352                    | 0.352       | 500             | 176          | \$26.4                      | None Proposed                                 | 4                        | 352                    | 0.352            | 500                                        | 350                                     | 176                          | 123.2                     | None Proposed                    | 0                         | 0              | 52.8            | 7.9                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | A3              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 20                       | 1760                   | 1.76        | 3380            | 5948.8       | \$892.3                     | None Proposed                                 | 20                       | 1760                   | 1.76             | 3380                                       | 2366                                    | 5948.8                       | 4164.16                   | None Proposed                    | 0                         | 0              | 1784.64         | 267.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | MUSIC           | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 21                       | 1848                   | 1.848       | 3380            | 6246.24      | \$936.9                     | None Proposed                                 | 21                       | 1848                   | 1.848            | 3380                                       | 2366                                    | 6246.24                      | 4372.368                  | None Proposed                    | 0                         | 0              | 1873.872        | 281.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | HALLWAY         | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 4                        | 352                    | 0.352       | 3380            | 1189.76      | \$178.5                     | None Proposed                                 | 4                        | 352                    | 0.352            | 3380                                       | 2366                                    | 1189.76                      | 832.832                   | None Proposed                    | 0                         | 0              | 356.928         | 53.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | MUSIC           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 48                       | 2433.6                 | 2.4336      | 3380            | 8225.568     | \$1,233.8                   | None Proposed                                 | 48                       | 2433.6                 | 2.4336           | 3380                                       | 2366                                    | 8225.568                     | 5757.8976                 | None Proposed                    | 0                         | 0              | 2467.6704       | 370.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Wall High School - Interior            | 001   | MUSIC           | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 4                        | 352                    | 0.352       | 3380            | 1189.76      | \$178.5                     | None Proposed                                 | 4                        | 352                    | 0.352            | 3380                                       | 2366                                    | 1189.76                      | 832.832                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 356.928         | 53.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Interior            | 001   | MUSIC           | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                 | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Exterior            | 001   | HALLWAY         | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Wall High School - Exterior            | 001   | EXTERIOR        | 250W MH Fixture                                   | 6                        | 1710                   | 1.71        | 4368            | 7469.28      | \$1,120.4                   | Replace 250W Fixture with LED Fixture         | 6                        | 660                    | 0.66             | 4368                                       | 3057.6                                  | 2882.88                      | 2018.016                  | Ceiling Mounted Occupancy Sensor | 1                         | 1.05           | 5451.264        | 817.7               | \$0.0                                    | \$390.0               | \$137.0                | \$103.0                           | \$73.5                                  | \$895.5     | \$2,443.0       | \$3,338.5               |
| Wall High School - Exterior            | 001   | EXTERIOR        | Exterior Wall Packs (Assume 70w)                  | 14                       | 1260                   | 1.26        | 4368            | 5503.68      | \$825.6                     | Replace 70W Fixture with LED Fixture          | 14                       | 616                    | 0.616            | 4368                                       | 3057.6                                  | 2690.688                     | 1883.4816                 | Ceiling Mounted Occupancy Sensor | 1                         | 0.644          | 3620.1984       | 543.0               | \$0.0                                    | \$380.0               | \$137.0                | \$103.0                           | \$73.5                                  | \$1,991.5   | \$5,423.0       | \$7,414.5               |
| Wall High School - Exterior            | 001   | EXTERIOR        | 60W Incandescent Fixture                          | 8                        | 480                    | 0.48        | 4368            | 2096.64      | \$314.5                     | Replace 60W Incandescent Fixture with 13W CFL | 8                        | 104                    | 0.104            | 4368                                       | 3057.6                                  | 454.272                      | 317.9904                  | Ceiling Mounted Occupancy Sensor | 1                         | 0.376          | 1778.6496       | 266.8               | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$105.5     | \$153.0         | \$258.5                 |
| Wall High School - Exterior            | 001   | EXTERIOR        | 26W CFL Fixture                                   | 9                        | 234                    | 0.234       | 4368            | 1022.112     | \$153.3                     | None Proposed                                 | 9                        | 234                    | 0.234            | 4368                                       | 3057.6                                  | 1022.112                     | 715.4784                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 306.6336        | 46.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | OFFICE ENTRY    | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                 | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | OFFICE ENTRY    | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | MAIN OFFICE     | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | MAIN OFFICE     | 1X4 Fixtures w/ 1-T8 Lamps w/ Electronic Ballasts | 1                        | 25.4                   | 0.0254      | 3380            | 85.852       | \$12.9                      | None Proposed                                 | 1                        | 25.4                   | 0.0254           | 3380                                       | 2366                                    | 85.852                       | 60.0964                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 25.7556         | 3.9                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | CONFERENCE ROOM | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | PRINCIPAL       | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | 21              | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | STORAGE ROOM    | 1X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 1                        | 112                    | 0.112       | 500             | 56           | \$8.4                       | None Proposed                                 | 1                        | 112                    | 0.112            | 500                                        | 350                                     | 56                           | 39.2                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 16.8            | 2.5                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | HALLWAY         | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | HALLWAY         | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                 | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | 24              | 1X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 9                        | 1008                   | 1.008       | 3380            | 3407.04      | \$511.1                     | None Proposed                                 | 9                        | 1008                   | 1.008            | 3380                                       | 2366                                    | 3407.04                      | 2384.928                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1022.112        | 153.3               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | BATHROOM        | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        |                        |             |                 |              |                             |                                               |                          |                        |                  |                                            |                                         |                              |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                         |             |                 |                         |

Appendix D - Lighting Upgrades

| Building                               | Floor | Location/Room #   | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                                          | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |
|----------------------------------------|-------|-------------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|------------------------------------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|
| Allenwood Elementary School - Interior | 001   | 27 CLOSET         | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL                          | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$77.5      | \$109.3         | \$186.8                 |
| Allenwood Elementary School - Interior | 001   | 28                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 6                        | 672                    | 0.672       | 3380            | 2271.36      | \$340.7                     | None Proposed                                                          | 6                        | 672                    | 0.672            | 3380                                       | 2366                                    | 2271.36                      | 1589.952                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 681.408         | 102.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | 28C               | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL                          | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$77.5      | \$109.3         | \$186.8                 |
| Allenwood Elementary School - Interior | 001   | 29                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 1                        | 112                    | 0.112       | 3380            | 378.56       | \$56.8                      | None Proposed                                                          | 1                        | 112                    | 0.112            | 3380                                       | 2366                                    | 378.56                       | 264.992                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 113.568         | 17.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | 30                | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | HALLWAY           | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | HALLWAY           | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 13                       | 1144                   | 1.144       | 3380            | 3866.72      | \$580.0                     | None Proposed                                                          | 13                       | 1144                   | 1.144            | 3380                                       | 2366                                    | 3866.72                      | 2706.704                  | None Proposed                    | 0                         | 0              | 1160.016        | 174.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 20                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 8                        | 896                    | 0.896       | 3380            | 3028.48      | \$454.3                     | None Proposed                                                          | 8                        | 896                    | 0.896            | 3380                                       | 2366                                    | 3028.48                      | 2119.936                  | None Proposed                    | 0                         | 0              | 908.544         | 136.3               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | CUSTODIANS CLOSET | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | BOILER VEST       | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL                          | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | None Proposed                    | 0                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$0.0                             | \$0.0                                   | \$4.0       | \$6.3           | \$10.3                  |
| Allenwood Elementary School - Interior | 001   | BOILER ROOM       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 5                        | 253.5                  | 0.2535      | 500             | 126.75       | \$19.0                      | None Proposed                                                          | 5                        | 253.5                  | 0.2535           | 500                                        | 350                                     | 126.75                       | 88.725                    | None Proposed                    | 0                         | 0              | 38.025          | 5.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 19                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 10                       | 1120                   | 1.12        | 3380            | 3785.6       | \$567.8                     | None Proposed                                                          | 10                       | 1120                   | 1.12             | 3380                                       | 2366                                    | 3785.6                       | 2649.92                   | None Proposed                    | 0                         | 0              | 1135.68         | 170.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 18                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 8                        | 896                    | 0.896       | 3380            | 3028.48      | \$454.3                     | None Proposed                                                          | 8                        | 896                    | 0.896            | 3380                                       | 2366                                    | 3028.48                      | 2119.936                  | None Proposed                    | 0                         | 0              | 908.544         | 136.3               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 17                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 14                       | 1232                   | 1.232       | 3380            | 4164.16      | \$624.6                     | None Proposed                                                          | 14                       | 1232                   | 1.232            | 3380                                       | 2366                                    | 4164.16                      | 2914.912                  | None Proposed                    | 0                         | 0              | 1249.248        | 187.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 17 BATH           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | HALLWAY           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 12                       | 608.4                  | 0.6084      | 3380            | 2056.392     | \$308.5                     | None Proposed                                                          | 12                       | 608.4                  | 0.6084           | 3380                                       | 2366                                    | 2056.392                     | 1439.4744                 | None Proposed                    | 0                         | 0              | 616.9176        | 92.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | CUSTODIANS CLOSET | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | None Proposed                    | 0                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 31                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 30                       | 3360                   | 3.36        | 3380            | 11356.8      | \$1,703.5                   | None Proposed                                                          | 30                       | 3360                   | 3.36             | 3380                                       | 2366                                    | 11356.8                      | 7949.76                   | None Proposed                    | 0                         | 0              | 3407.04         | 511.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 31 CLOSET         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 32                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 20                       | 1760                   | 1.76        | 3380            | 5948.8       | \$892.3                     | None Proposed                                                          | 20                       | 1760                   | 1.76             | 3380                                       | 2366                                    | 5948.8                       | 4164.16                   | None Proposed                    | 0                         | 0              | 1784.64         | 267.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | KILN              | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | None Proposed                    | 0                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 33                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 4                        | 352                    | 0.352       | 3380            | 1189.76      | \$178.5                     | None Proposed                                                          | 4                        | 352                    | 0.352            | 3380                                       | 2366                                    | 1189.76                      | 832.832                   | None Proposed                    | 0                         | 0              | 356.928         | 53.5                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | STORAGE           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | BOYS              | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$15.2                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | None Proposed                    | 0                         | 0              | 30.42           | 4.6                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | GIRLS             | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$15.2                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | None Proposed                    | 0                         | 0              | 30.42           | 4.6                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 34                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$267.7                     | None Proposed                                                          | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | None Proposed                    | 0                         | 0              | 535.392         | 80.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 35                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 18                       | 1584                   | 1.584       | 3380            | 5353.92      | \$803.1                     | None Proposed                                                          | 18                       | 1584                   | 1.584            | 3380                                       | 2366                                    | 5353.92                      | 3747.744                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1606.176        | 240.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | ELECTRICAL ROOM   | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 001   | 36                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 15                       | 1320                   | 1.32        | 3380            | 4461.6       | \$669.2                     | None Proposed                                                          | 15                       | 1320                   | 1.32             | 3380                                       | 2366                                    | 4461.6                       | 3123.12                   | None Proposed                    | 0                         | 0              | 1338.48         | 200.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 37                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 15                       | 1320                   | 1.32        | 3380            | 4461.6       | \$669.2                     | None Proposed                                                          | 15                       | 1320                   | 1.32             | 3380                                       | 2366                                    | 4461.6                       | 3123.12                   | None Proposed                    | 0                         | 0              | 1338.48         | 200.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | HALLWAY           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 7                        | 354.9                  | 0.3549      | 3380            | 1199.562     | \$179.9                     | None Proposed                                                          | 7                        | 354.9                  | 0.3549           | 3380                                       | 2366                                    | 1199.562                     | 839.8934                  | None Proposed                    | 0                         | 0              | 359.8686        | 54.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 13                | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 24                       | 2112                   | 2.112       | 3380            | 7138.56      | \$1,070.8                   | None Proposed                                                          | 24                       | 2112                   | 2.112            | 3380                                       | 2366                                    | 7138.56                      | 4996.992                  | None Proposed                    | 0                         | 0              | 2141.568        | 321.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 13                | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | None Proposed                    | 0                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 002   | GYM               | 250W Metal Halide Fixtures                        | 13                       | 3705                   | 3.705       | 3380            | 12522.9      | \$1,878.4                   | Replace Metal Halide Fixtures with 4-Lamp Fluorescent Highway Fixtures | 13                       | 1430                   | 1.43             | 3380                                       | 2366                                    | 4833.4                       | 3383.38                   | None Proposed                    | 0                         | 2.275          | 9139.52         | 1,370.9             | \$0.0                                    | \$185.0               | \$133.0                | \$0.0                             | \$0.0                                   | \$1,729.0   | \$2,405.0       | \$4,134.0               |
| Allenwood Elementary School - Interior | 002   | STAGE             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                                          | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 002   | STAGE HALL        | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 3380            | 171.366      | \$25.7                      | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 3380                                       | 2366                                    | 171.366                      | 119.9562                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 51.4098         | 7.7                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 002   | STAGE OFFICE      | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 1                        | 112                    | 0.112       | 3380            | 378.56       | \$56.8                      | None Proposed                                                          | 1                        | 112                    | 0.112            | 3380                                       | 2366                                    | 378.56                       | 264.992                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 113.568         | 17.0                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 002   | HALLWAY           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$385.6                     | None Proposed                                                          | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 115.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 000   | CAFÉ              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 25                       | 2200                   | 2.2         | 3380            | 7436         | \$1,115.4                   | None Proposed                                                          | 25                       | 2200                   | 2.2              | 3380                                       | 2366                                    | 7436                         | 5205.2                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 2230.8          | 334.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 000   | STORAGE           | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                                          | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |
| Allenwood Elementary School - Interior | 000   | CUSTODIAN OFFICE  | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   |
| Allenwood Elementary School - Interior | 001   | 10                | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 8                        | 896                    | 0.896       | 3380            | 3028.48      | \$454.3                     | None Proposed                                                          | 8                        | 896                    | 0.896            | 3380                                       |                                         |                              |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                         |             |                 |                         |

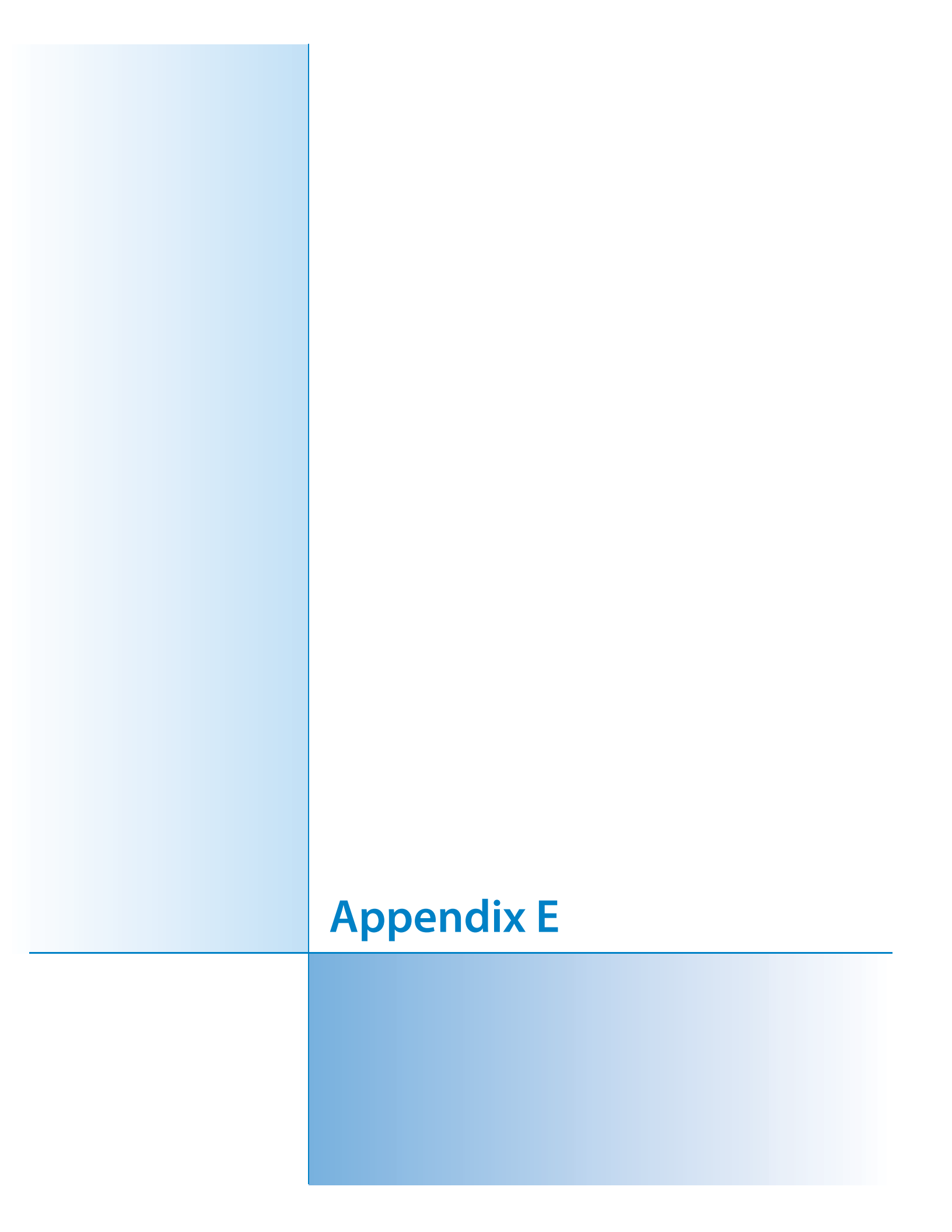


Appendix D - Lighting Upgrades

| Building                               | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                                          | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupancy Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|----------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|------------------------------------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------------------------|-------------|-----------------|-------------------------|-------|
| Allenwood Elementary School - Interior | 002   | BOYS            | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 2                        | 224                    | 0.224       | 500             | 112          | \$16.8                      | None Proposed                                                          | 2                        | 224                    | 0.224            | 500                                        | 350                                     | 112                          | 78.4                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 33.6            | 5.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 002   | GIRLS           | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 2                        | 224                    | 0.224       | 500             | 112          | \$16.8                      | None Proposed                                                          | 2                        | 224                    | 0.224            | 500                                        | 350                                     | 112                          | 78.4                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 33.6            | 5.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 002   | 2               | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                                          | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 002   | 1               | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 12                       | 1056                   | 1.056       | 3380            | 3569.28      | \$535.4                     | None Proposed                                                          | 12                       | 1056                   | 1.056            | 3380                                       | 2366                                    | 3569.28                      | 2498.496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1070.784        | 160.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 002   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$205.6                     | None Proposed                                                          | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 411.2784        | 61.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 001   | BOYS            | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 2                        | 224                    | 0.224       | 500             | 112          | \$16.8                      | None Proposed                                                          | 2                        | 224                    | 0.224            | 500                                        | 350                                     | 112                          | 78.4                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 33.6            | 5.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 001   | 14              | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 6                        | 528                    | 0.528       | 3380            | 1784.64      | \$267.7                     | None Proposed                                                          | 6                        | 528                    | 0.528            | 3380                                       | 2366                                    | 1784.64                      | 1249.248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 535.392         | 80.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 001   | RESTROOM 14     | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 1                        | 112                    | 0.112       | 500             | 56           | \$8.4                       | None Proposed                                                          | 1                        | 112                    | 0.112            | 500                                        | 350                                     | 56                           | 39.2                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 16.8            | 2.5                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 001   | STORAGE 14      | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 2                        | 224                    | 0.224       | 500             | 112          | \$16.8                      | None Proposed                                                          | 2                        | 224                    | 0.224            | 500                                        | 350                                     | 112                          | 78.4                      | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 33.6            | 5.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 001   | 15              | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 8                        | 896                    | 0.896       | 3380            | 3028.48      | \$454.3                     | None Proposed                                                          | 8                        | 896                    | 0.896            | 3380                                       | 2366                                    | 3028.48                      | 2119.936                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 908.544         | 136.3               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Interior | 001   | 16              | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 8                        | 896                    | 0.896       | 3380            | 3028.48      | \$454.3                     | None Proposed                                                          | 8                        | 896                    | 0.896            | 3380                                       | 2366                                    | 3028.48                      | 2119.936                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 908.544         | 136.3               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Allenwood Elementary School - Exterior | 000   | EXTERIOR        | 60W Incandescent Fixture                          | 3                        | 180                    | 0.18        | 3380            | 608.4        | \$91.3                      | Replace 60W Incandescent Fixture with 13W CFL                          | 3                        | 39                     | 0.039            | 3380                                       | 2366                                    | 131.82                       | 92.274                    | Ceiling Mounted Occupancy Sensor | 1                         | 0.141          | 516.126         | 77.4                | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$85.5      | \$121.8         | \$207.3                 |       |
| Allenwood Elementary School - Exterior | 000   | EXTERIOR        | 150W Metal Halide Wall Pack                       | 11                       | 2079                   | 2.079       | 4368            | 9081.072     | \$1,382.2                   | Replace 150W Fixture with LED Fixture                                  | 11                       | 990                    | 0.99             | 4368                                       | 3057.6                                  | 4324.32                      | 3027.024                  | Ceiling Mounted Occupancy Sensor | 1                         | 1.089          | 6054.048        | 908.1               | \$0.0                                    | \$380.0               | \$137.0                | \$103.0                           | \$73.5                                  | \$1,580.5   | \$4,283.0       | \$5,863.5               |       |
| Allenwood Elementary School - Interior | 000   | EXTERIOR        | Exterior Wall Packs (Assume 70w)                  | 9                        | 810                    | 0.81        | 4368            | 3538.08      | \$530.7                     | Replace 70W Fixture with LED Fixture                                   | 9                        | 396                    | 0.396            | 4368                                       | 3057.6                                  | 1729.728                     | 1210.8096                 | Ceiling Mounted Occupancy Sensor | 1                         | 0.414          | 2327.2704       | 349.1               | \$0.0                                    | \$380.0               | \$137.0                | \$103.0                           | \$73.5                                  | \$1,306.5   | \$3,523.0       | \$4,829.5               |       |
| Old Mill Elementary School - Interior  | 001   | MAIN OFFICE     | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 16                       | 811.2                  | 0.8112      | 3380            | 2741.856     | \$411.3                     | None Proposed                                                          | 16                       | 811.2                  | 0.8112           | 3380                                       | 2366                                    | 2741.856                     | 1919.2992                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 822.5568        | 123.4               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 001   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 25                       | 1267.5                 | 1.2675      | 3380            | 4284.15      | \$642.6                     | None Proposed                                                          | 25                       | 1267.5                 | 1.2675           | 3380                                       | 2366                                    | 4284.15                      | 2998.905                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1285.245        | 192.8               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 001   | GYM             | 250W Metal Halide Fixtures                        | 24                       | 6940                   | 6.84        | 3380            | 23119.2      | \$3,467.9                   | Replace Metal Halide Fixtures with 4-Lamp Fluorescent Highway Fixtures | 24                       | 2640                   | 2.64             | 3380                                       | 2366                                    | 8923.2                       | 6246.24                   | Ceiling Mounted Occupancy Sensor | 1                         | 4.2            | 16872.96        | 2,530.9             | \$0.0                                    | \$185.0               | \$133.0                | \$103.0                           | \$73.5                                  | \$3,265.5   | \$4,543.0       | \$7,808.5               |       |
| Old Mill Elementary School - Interior  | 001   | GYM             | 100W Incandescent Fixture                         | 8                        | 800                    | 0.8         | 3380            | 2704         | \$405.6                     | Replace 100W Incandescent Fixture with 25W CFL                         | 8                        | 200                    | 0.2              | 3380                                       | 2366                                    | 676                          | 473.2                     | Ceiling Mounted Occupancy Sensor | 1                         | 0.6            | 2230.8          | 334.6               | \$0.0                                    | \$7.0                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$105.5     | \$159.0         | \$264.5                 |       |
| Old Mill Elementary School - Interior  | 001   | CONFERENCE ROOM | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$205.6                     | None Proposed                                                          | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 411.2784        | 61.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 001   | STORAGE         | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$15.2                      | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 30.42           | 4.6                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 000   | 221             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 000   | RESTROOM        | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL                          | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$77.5      | \$109.3         | \$186.8                 |       |
| Old Mill Elementary School - Interior  | 000   | PRINCIPAL 226   | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 000   | GYM OFFICE      | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 002   | STAGE           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 33                       | 1673.1                 | 1.6731      | 3380            | 5655.078     | \$848.3                     | None Proposed                                                          | 33                       | 1673.1                 | 1.6731           | 3380                                       | 2366                                    | 5655.078                     | 3958.5546                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1696.5234       | 254.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | NURSE           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 9                        | 456.3                  | 0.4563      | 3380            | 1542.294     | \$231.3                     | None Proposed                                                          | 9                        | 456.3                  | 0.4563           | 3380                                       | 2366                                    | 1542.294                     | 1079.6058                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 462.6882        | 69.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | NURSE           | 60W Incandescent Fixture                          | 2                        | 120                    | 0.12        | 3380            | 405.6        | \$60.8                      | Replace 60W Incandescent Fixture with 13W CFL                          | 2                        | 26                     | 0.026            | 3380                                       | 2366                                    | 87.88                        | 61.516                    | Ceiling Mounted Occupancy Sensor | 1                         | 0.094          | 344.084         | 51.6                | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                  | \$81.5      | \$115.5         | \$197.0                 |       |
| Old Mill Elementary School - Interior  | 003   | STAFF RESTROOM  | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | STAFF RESTROOM  | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                                          | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | STAIRWELL       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                                          | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | 222             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 15                       | 760.5                  | 0.7605      | 3380            | 2570.49      | \$385.6                     | None Proposed                                                          | 15                       | 760.5                  | 0.7605           | 3380                                       | 2366                                    | 2570.49                      | 1799.343                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 771.147         | 115.7               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | RECEIVING       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 5                        | 253.5                  | 0.2535      | 3380            | 856.83       | \$128.5                     | None Proposed                                                          | 5                        | 253.5                  | 0.2535           | 3380                                       | 2366                                    | 856.83                       | 599.781                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 257.049         | 38.6                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | RECEIVING       | 1X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 2                        | 224                    | 0.224       | 3380            | 757.12       | \$113.6                     | None Proposed                                                          | 2                        | 224                    | 0.224            | 3380                                       | 2366                                    | 757.12                       | 529.984                   | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 227.136         | 34.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | 219             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                                          | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | 218             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                                          | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | 242             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | 243             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                                          | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | 246             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 59                       | 2991.3                 | 2.9913      | 3380            | 10110.594    | \$1,516.6                   | None Proposed                                                          | 59                       | 2991.3                 | 2.9913           | 3380                                       | 2366                                    | 10110.594                    | 7077.4158                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 3033.1782       | 455.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior  | 003   | SOCIAL WORKER   | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | None Proposed                    | 0                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                   | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior  | 003   | COPY            | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                                          | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                  | \$73.5      | \$103.0         | \$17                    |       |

Appendix D - Lighting Upgrades

| Building                              | Floor | Location/Room # | Existing Fixture/Lamp & Ballast Description       | Qty of Existing Fixtures | Existing Fixture Watts | Existing kW | Operating Hours | Existing kWh | Existing Annual Energy Cost | Proposed Replacement Solution                 | Qty of Proposed Fixtures | Proposed Fixture Watts | Proposed kW Base | Proposed Operational Hours Without Sensors | Proposed Operational Hours With Sensors | Proposed kWh Without Sensors | Proposed kWh With Sensors | Proposed Occupancy Sensor Type   | Occupancy Sensor Quantity | Total kW Saved | Total kWh Saved | Energy Cost Savings | Ballast/Fixture/Reflector Per Unit Price | Bulb (Per Unit Price) | Labor (Per Unit Price) | Occupancy Sensor (Per Unit Price) | Occupany Sensor (Per Unit Labor Price) | Labor Total | Materials Total | Labor & Materials Total |       |
|---------------------------------------|-------|-----------------|---------------------------------------------------|--------------------------|------------------------|-------------|-----------------|--------------|-----------------------------|-----------------------------------------------|--------------------------|------------------------|------------------|--------------------------------------------|-----------------------------------------|------------------------------|---------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------------------------------------|-----------------------|------------------------|-----------------------------------|----------------------------------------|-------------|-----------------|-------------------------|-------|
| Old Mill Elementary School - Interior | 002   | 255             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 212             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 211             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 201             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 7                        | 616                    | 0.616       | 3380            | 2082.08      | \$312.3                     | None Proposed                                 | 7                        | 616                    | 0.616            | 3380                                       | 2366                                    | 2082.08                      | 1457.456                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 624.624         | 93.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 6                        | 304.2                  | 0.3042      | 3380            | 1028.196     | \$154.2                     | None Proposed                                 | 6                        | 304.2                  | 0.3042           | 3380                                       | 2366                                    | 1028.196                     | 719.7372                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 308.4588        | 46.3                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 202             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 13                       | 1144                   | 1.144       | 3380            | 3866.72      | \$580.0                     | None Proposed                                 | 13                       | 1144                   | 1.144            | 3380                                       | 2366                                    | 3866.72                      | 2706.704                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1160.016        | 174.0               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 202             | 2X2 Fixtures w/ 2-T9 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                 | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | STAFF BATHROOM  | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                 | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 208             | 2X4 Fixtures w/ 3-T8 Lamps w/ Electronic Ballasts | 18                       | 1584                   | 1.584       | 3380            | 5353.92      | \$803.1                     | None Proposed                                 | 18                       | 1584                   | 1.584            | 3380                                       | 2366                                    | 5353.92                      | 3747.744                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1606.176        | 240.9               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | TECH OFFICE     | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 3380            | 342.732      | \$51.4                      | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 3380                                       | 2366                                    | 342.732                      | 239.9124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 102.8196        | 15.4                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 000   | STAIRWELL       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                 | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 000   | HALLWAY         | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 27                       | 1368.9                 | 1.3689      | 3380            | 4626.882     | \$694.0                     | None Proposed                                 | 27                       | 1368.9                 | 1.3689           | 3380                                       | 2366                                    | 4626.882                     | 3238.8174                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1388.0646       | 208.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | STAIRWELL       | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 3                        | 152.1                  | 0.1521      | 3380            | 514.098      | \$77.1                      | None Proposed                                 | 3                        | 152.1                  | 0.1521           | 3380                                       | 2366                                    | 514.098                      | 359.8686                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 154.2294        | 23.1                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 128             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 24                       | 1216.8                 | 1.2168      | 3380            | 4112.784     | \$616.9                     | None Proposed                                 | 24                       | 1216.8                 | 1.2168           | 3380                                       | 2366                                    | 4112.784                     | 2878.9488                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1233.8352       | 185.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 128 CLOSET      | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 128 VEST        | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 3380            | 202.8        | \$30.4                      | Replace 60W Incandescent Fixture with 13W CFL | 1                        | 13                     | 0.013            | 3380                                       | 2366                                    | 43.94                        | 30.758                    | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 172.042         | 25.8                | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                 | \$77.5      | \$109.3         | \$186.8                 |       |
| Old Mill Elementary School - Interior | 002   | RESTROOM        | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 1                        | 50.7                   | 0.0507      | 500             | 25.35        | \$3.8                       | None Proposed                                 | 1                        | 50.7                   | 0.0507           | 500                                        | 350                                     | 25.35                        | 17.745                    | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 7.605           | 1.1                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 124             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 24                       | 1216.8                 | 1.2168      | 3380            | 4112.784     | \$616.9                     | None Proposed                                 | 24                       | 1216.8                 | 1.2168           | 3380                                       | 2366                                    | 4112.784                     | 2878.9488                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1233.8352       | 185.1               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 123             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 132             | 2X4 Fixtures w/ 2-T9 Lamps w/ Electronic Ballasts | 36                       | 1825.2                 | 1.8252      | 3380            | 6169.176     | \$925.4                     | None Proposed                                 | 36                       | 1825.2                 | 1.8252           | 3380                                       | 2366                                    | 6169.176                     | 4318.4232                 | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1850.7528       | 277.6               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 119             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 118             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 8                        | 405.6                  | 0.4056      | 3380            | 1370.928     | \$205.6                     | None Proposed                                 | 8                        | 405.6                  | 0.4056           | 3380                                       | 2366                                    | 1370.928                     | 959.6496                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 411.2784        | 61.7                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 001   | 117             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 133             | 2X4 Fixtures w/ 2-T9 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 3380            | 685.464      | \$102.8                     | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 3380                                       | 2366                                    | 685.464                      | 479.8248                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 205.6392        | 30.8                | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 000   | GIRLS           | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$15.2                      | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 30.42           | 4.6                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 000   | GIRLS           | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | Ceiling Mounted Occupancy Sensor | 1                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$103.0                           | \$73.5                                 | \$77.5      | \$109.3         | \$186.8                 |       |
| Old Mill Elementary School - Interior | 001   | CUSTODIAN       | 2X2 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 002   | 116             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 20                       | 1014                   | 1.014       | 3380            | 3427.32      | \$514.1                     | None Proposed                                 | 20                       | 1014                   | 1.014            | 3380                                       | 2366                                    | 3427.32                      | 2399.124                  | Ceiling Mounted Occupancy Sensor | 1                         | 0              | 1028.196        | 154.2               | \$0.0                                    | \$0.0                 | \$0.0                  | \$103.0                           | \$73.5                                 | \$73.5      | \$103.0         | \$176.5                 |       |
| Old Mill Elementary School - Interior | 003   | BOYS            | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 003   | BOYS            | 60W Incandescent Fixture                          | 1                        | 60                     | 0.06        | 500             | 30           | \$4.5                       | Replace 60W Incandescent Fixture with 13W CFL | 1                        | 13                     | 0.013            | 500                                        | 350                                     | 6.5                          | 4.55                      | None Proposed                    | 0                         | 0.047          | 25.45           | 3.8                 | \$0.0                                    | \$6.3                 | \$4.0                  | \$0.0                             | \$0.0                                  | \$4.0       | \$6.3           | \$10.3                  |       |
| Old Mill Elementary School - Interior | 003   | 115             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 19                       | 963.3                  | 0.9633      | 3380            | 3255.954     | \$488.4                     | None Proposed                                 | 19                       | 963.3                  | 0.9633           | 3380                                       | 2366                                    | 3255.954                     | 2279.1678                 | None Proposed                    | 0                         | 0              | 976.7862        | 146.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 003   | 100             | 1X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 15                       | 1680                   | 1.68        | 3380            | 5678.4       | \$851.8                     | None Proposed                                 | 15                       | 1680                   | 1.68             | 3380                                       | 2366                                    | 5678.4                       | 3974.88                   | None Proposed                    | 0                         | 0              | 1703.52         | 255.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 003   | MUSIC STORAGE   | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 2                        | 101.4                  | 0.1014      | 500             | 50.7         | \$7.6                       | None Proposed                                 | 2                        | 101.4                  | 0.1014           | 500                                        | 350                                     | 50.7                         | 35.49                     | None Proposed                    | 0                         | 0              | 15.21           | 2.3                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 003   | 114             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 19                       | 963.3                  | 0.9633      | 3380            | 3255.954     | \$488.4                     | None Proposed                                 | 19                       | 963.3                  | 0.9633           | 3380                                       | 2366                                    | 3255.954                     | 2279.1678                 | None Proposed                    | 0                         | 0              | 976.7862        | 146.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 003   | 104             | 1X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 15                       | 1680                   | 1.68        | 3380            | 5678.4       | \$851.8                     | None Proposed                                 | 15                       | 1680                   | 1.68             | 3380                                       | 2366                                    | 5678.4                       | 3974.88                   | None Proposed                    | 0                         | 0              | 1703.52         | 255.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior |       | ART STORAGE     | 2X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 4                        | 202.8                  | 0.2028      | 500             | 101.4        | \$15.2                      | None Proposed                                 | 4                        | 202.8                  | 0.2028           | 500                                        | 350                                     | 101.4                        | 70.98                     | None Proposed                    | 0                         | 0              | 30.42           | 4.6                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior |       | 113             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 19                       | 963.3                  | 0.9633      | 3380            | 3255.954     | \$488.4                     | None Proposed                                 | 19                       | 963.3                  | 0.9633           | 3380                                       | 2366                                    | 3255.954                     | 2279.1678                 | None Proposed                    | 0                         | 0              | 976.7862        | 146.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior |       | 112             | 1X4 Fixtures w/ 2-T8 Lamps w/ Electronic Ballasts | 19                       | 963.3                  | 0.9633      | 3380            | 3255.954     | \$488.4                     | None Proposed                                 | 19                       | 963.3                  | 0.9633           | 3380                                       | 2366                                    | 3255.954                     | 2279.1678                 | None Proposed                    | 0                         | 0              | 976.7862        | 146.5               | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 010   | 106             | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 5                        | 560                    | 0.56        | 3380            | 1892.8       | \$283.9                     | None Proposed                                 | 5                        | 560                    | 0.56             | 3380                                       | 2366                                    | 1892.8                       | 1324.96                   | None Proposed                    | 0                         | 0              | 567.84          | 85.2                | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Interior | 010   | ELECTRICAL ROOM | 2X4 Fixtures w/ 4-T8 Lamps w/ Electronic Ballasts | 2                        | 224                    | 0.224       | 500             | 112          | \$16.8                      | None Proposed                                 | 2                        | 224                    | 0.224            | 500                                        | 350                                     | 112                          | 78.4                      | None Proposed                    | 0                         | 0              | 33.6            | 5.0                 | \$0.0                                    | \$0.0                 | \$0.0                  | \$0.0                             | \$0.0                                  | \$0.0       | \$0.0           | \$0.0                   | \$0.0 |
| Old Mill Elementary School - Exterior | 000   | EXTERIOR        | Pole Mounted Luminaire - 2 Head (Assume 200W MH)  | 4                        |                        |             |                 |              |                             |                                               |                          |                        |                  |                                            |                                         |                              |                           |                                  |                           |                |                 |                     |                                          |                       |                        |                                   |                                        |             |                 |                         |       |

The graphic consists of a large light blue rectangle on the left side of the page. A horizontal line extends from the right edge of this rectangle across the page. A vertical line extends from the bottom of the light blue rectangle down to the bottom of the page. These two lines intersect at the bottom right corner of the light blue rectangle, forming an L-shape. The text "Appendix E" is positioned at this intersection point, with the "A" and "E" partially overlapping the light blue area and the "ppendix" part on the white background.

## Appendix E

## Allenwood Elementary School

### Existing Conditions

|                                                  |                       |
|--------------------------------------------------|-----------------------|
| Current Utility Price (\$/kWh)                   | 0.15                  |
| Actual SREC Market Values (January 2010-Present) | \$110/MWh - \$700/MWh |

### Calculations

|                                        |      |                    |
|----------------------------------------|------|--------------------|
| Solar Rating - Zip Code:               | 8750 | 4.42 kWh/sq-m/day  |
| Solar Capacity Required (kW)           |      | 215.493278         |
| Roof Space Needed (sq-ft)              |      | 21,549.33          |
| Annual Solar kWh (PV Watts)            |      | 251,481            |
| Net System installation Cost (\$9/kWh) |      | \$1,939,440        |
| Electrical Service Modification Cost   |      | \$100,000          |
| Total System Installation Cost         |      | <b>\$2,039,440</b> |
| Materials                              |      | \$1,427,608        |
| Labor                                  |      | \$611,832          |
| Engineers Opinion of Probable Cost     |      | \$2,549,299        |

### Assumptions

|                           |       |
|---------------------------|-------|
| Annual System Degredation | 0.50% |
| Annual Utility Inflation  | 3.00% |
| Annual Maintenance Costs  | 2%    |

| Year    | Utility Price | Solar kWh | Utility Savings | SRECS    | Maintenance Costs | Annual Cash Flow | Cummulative Cash Flow | SREC Factor (\$/kWh)* | REC Factor (\$/kWh) |
|---------|---------------|-----------|-----------------|----------|-------------------|------------------|-----------------------|-----------------------|---------------------|
| Install |               |           |                 |          |                   |                  |                       |                       |                     |
| 1       | 0.1500        | 251,480.7 | \$37,722.1      | \$75,444 | (\$5,030)         | \$108,136.7      | \$108,136.7           | \$0.300               |                     |
| 2       | 0.1545        | 250,223.3 | \$38,659.5      | \$75,067 | (\$5,004)         | \$108,722.0      | \$216,858.7           | \$0.300               |                     |
| 3       | 0.1591        | 248,972.1 | \$39,620.2      | \$74,692 | (\$4,979)         | \$109,332.4      | \$326,191.1           | \$0.300               |                     |
| 4       | 0.1639        | 247,727.3 | \$40,604.7      | \$74,318 | (\$4,955)         | \$109,968.4      | \$436,159.4           | \$0.300               |                     |
| 5       | 0.1688        | 246,488.6 | \$41,613.8      | \$73,947 | (\$4,930)         | \$110,630.6      | \$546,790.0           | \$0.300               |                     |
| 6       | 0.1739        | 245,256.2 | \$42,647.9      | \$73,577 | (\$4,905)         | \$111,319.6      | \$658,109.6           | \$0.300               |                     |
| 7       | 0.1791        | 244,029.9 | \$43,707.7      | \$73,209 | (\$4,881)         | \$112,036.0      | \$770,145.7           | \$0.300               |                     |
| 8       | 0.1845        | 242,809.8 | \$44,793.8      | \$72,843 | (\$4,856)         | \$112,780.5      | \$882,926.2           | \$0.300               |                     |
| 9       | 0.1900        | 241,595.7 | \$45,906.9      | \$72,479 | (\$4,832)         | \$113,553.7      | \$996,480.0           | \$0.300               |                     |
| 10      | 0.1957        | 240,387.7 | \$47,047.7      | \$72,116 | (\$4,808)         | \$114,356.3      | \$1,110,836.3         | \$0.300               |                     |
| 11      | 0.2016        | 239,185.8 | \$48,216.9      | \$71,756 | (\$4,784)         | \$115,188.9      | \$1,226,025.1         | \$0.300               |                     |
| 12      | 0.2076        | 237,989.9 | \$49,415.0      | \$71,397 | (\$4,760)         | \$116,052.2      | \$1,342,077.3         | \$0.300               |                     |
| 13      | 0.2139        | 236,799.9 | \$50,643.0      | \$71,040 | (\$4,736)         | \$116,947.0      | \$1,459,024.3         | \$0.300               |                     |
| 14      | 0.2203        | 235,615.9 | \$51,901.5      | \$70,685 | (\$4,712)         | \$117,873.9      | \$1,576,898.3         | \$0.300               |                     |
| 15      | 0.2269        | 234,437.8 | \$53,191.2      | \$70,331 | (\$4,689)         | \$118,833.8      | \$1,695,732.1         | \$0.300               |                     |
| 16      | 0.2337        | 233,265.7 | \$54,513.0      | \$0      | (\$4,665)         | \$49,847.7       | \$1,745,579.8         |                       |                     |
| 17      | 0.2407        | 232,099.3 | \$55,867.7      | \$0      | (\$4,642)         | \$51,225.7       | \$1,796,805.5         |                       |                     |
| 18      | 0.2479        | 230,938.8 | \$57,256.0      | \$0      | (\$4,619)         | \$52,637.2       | \$1,849,442.8         |                       |                     |
| 19      | 0.2554        | 229,784.1 | \$58,678.8      | \$0      | (\$4,596)         | \$54,083.1       | \$1,903,525.9         |                       |                     |
| 20      | 0.2630        | 228,635.2 | \$60,137.0      | \$0      | (\$4,573)         | \$55,564.3       | \$1,959,090.2         |                       |                     |
| 21      | 0.2709        | 227,492.0 | \$61,631.4      | \$0      | (\$4,550)         | \$57,081.5       | \$2,016,171.7         |                       |                     |
| 22      | 0.2790        | 226,354.6 | \$63,162.9      | \$0      | (\$4,527)         | \$58,635.8       | \$2,074,807.6         |                       |                     |
| 23      | 0.2874        | 225,222.8 | \$64,732.5      | \$0      | (\$4,504)         | \$60,228.1       | \$2,135,035.6         |                       |                     |
| 24      | 0.2960        | 224,096.7 | \$66,341.1      | \$0      | (\$4,482)         | \$61,859.2       | \$2,196,894.8         |                       |                     |
| 25      | 0.3049        | 222,976.2 | \$67,989.7      | \$0      | (\$4,460)         | \$63,530.2       | \$2,260,425.0         |                       |                     |

\* SREC factor is referenced from the NJBPU Solar Alternative Compliance Payment (SACP) schedule.

## Central Elementary School

### Existing Conditions

|                                                  |                       |
|--------------------------------------------------|-----------------------|
| Current Utility Price (\$/kWh)                   | 0.15                  |
| Actual SREC Market Values (January 2010-Present) | \$110/MWh - \$700/MWh |

### Calculations

|                                        |                    |                   |
|----------------------------------------|--------------------|-------------------|
| Solar Rating - Zip Code:               | 8750               | 4.42 kWh/sq-m/day |
| Solar Capacity Required (kW)           | 113.451506         |                   |
| Roof Space Needed (sq-ft)              | 11,345.15          |                   |
| Annual Solar kWh (PV Watts)            | 132,398            |                   |
| Net System installation Cost (\$9/kWh) | \$1,021,064        |                   |
| Electrical Service Modification Cost   | \$100,000          |                   |
| Total System Installation Cost         | <b>\$1,121,064</b> |                   |
| Materials                              | \$784,744          |                   |
| Labor                                  | \$336,319          |                   |
| Engineers Opinion of Probable Cost     | \$1,401,329        |                   |

### Assumptions

|                           |       |
|---------------------------|-------|
| Annual System Degredation | 0.50% |
| Annual Utility Inflation  | 3.00% |
| Annual Maintenance Costs  | 2%    |

| Year    | Utility Price | Solar kWh | Utility Savings | SRECS    | Maintenance Costs | Annual Cash Flow | Cummulative Cash Flow | SREC Factor (\$/kWh)* | REC Factor (\$/kWh) |
|---------|---------------|-----------|-----------------|----------|-------------------|------------------|-----------------------|-----------------------|---------------------|
| Install |               |           |                 |          |                   |                  |                       |                       |                     |
| 1       | 0.1500        | 132,397.9 | \$19,859.7      | \$39,719 | (\$2,648)         | \$56,931.1       | \$56,931.1            | \$0.300               |                     |
| 2       | 0.1545        | 131,735.9 | \$20,353.2      | \$39,521 | (\$2,635)         | \$57,239.3       | \$114,170.4           | \$0.300               |                     |
| 3       | 0.1591        | 131,077.2 | \$20,859.0      | \$39,323 | (\$2,622)         | \$57,560.6       | \$171,731.0           | \$0.300               |                     |
| 4       | 0.1639        | 130,421.9 | \$21,377.3      | \$39,127 | (\$2,608)         | \$57,895.4       | \$229,626.4           | \$0.300               |                     |
| 5       | 0.1688        | 129,769.7 | \$21,908.5      | \$38,931 | (\$2,595)         | \$58,244.1       | \$287,870.5           | \$0.300               |                     |
| 6       | 0.1739        | 129,120.9 | \$22,453.0      | \$38,736 | (\$2,582)         | \$58,606.8       | \$346,477.3           | \$0.300               |                     |
| 7       | 0.1791        | 128,475.3 | \$23,010.9      | \$38,543 | (\$2,570)         | \$58,984.0       | \$405,461.3           | \$0.300               |                     |
| 8       | 0.1845        | 127,832.9 | \$23,582.8      | \$38,350 | (\$2,557)         | \$59,376.0       | \$464,837.3           | \$0.300               |                     |
| 9       | 0.1900        | 127,193.7 | \$24,168.8      | \$38,158 | (\$2,544)         | \$59,783.0       | \$524,620.3           | \$0.300               |                     |
| 10      | 0.1957        | 126,557.8 | \$24,769.4      | \$37,967 | (\$2,531)         | \$60,205.6       | \$584,825.9           | \$0.300               |                     |
| 11      | 0.2016        | 125,925.0 | \$25,384.9      | \$37,777 | (\$2,518)         | \$60,643.9       | \$645,469.8           | \$0.300               |                     |
| 12      | 0.2076        | 125,295.4 | \$26,015.7      | \$37,589 | (\$2,506)         | \$61,098.4       | \$706,568.2           | \$0.300               |                     |
| 13      | 0.2139        | 124,668.9 | \$26,662.2      | \$37,401 | (\$2,493)         | \$61,569.5       | \$768,137.7           | \$0.300               |                     |
| 14      | 0.2203        | 124,045.5 | \$27,324.8      | \$37,214 | (\$2,481)         | \$62,057.5       | \$830,195.2           | \$0.300               |                     |
| 15      | 0.2269        | 123,425.3 | \$28,003.8      | \$37,028 | (\$2,469)         | \$62,562.9       | \$892,758.1           | \$0.300               |                     |
| 16      | 0.2337        | 122,808.2 | \$28,699.7      | \$0      | (\$2,456)         | \$26,243.5       | \$919,001.6           |                       |                     |
| 17      | 0.2407        | 122,194.1 | \$29,412.9      | \$0      | (\$2,444)         | \$26,969.0       | \$945,970.6           |                       |                     |
| 18      | 0.2479        | 121,583.2 | \$30,143.8      | \$0      | (\$2,432)         | \$27,712.1       | \$973,682.7           |                       |                     |
| 19      | 0.2554        | 120,975.3 | \$30,892.8      | \$0      | (\$2,420)         | \$28,473.3       | \$1,002,156.0         |                       |                     |
| 20      | 0.2630        | 120,370.4 | \$31,660.5      | \$0      | (\$2,407)         | \$29,253.1       | \$1,031,409.1         |                       |                     |
| 21      | 0.2709        | 119,768.5 | \$32,447.3      | \$0      | (\$2,395)         | \$30,051.9       | \$1,061,461.0         |                       |                     |
| 22      | 0.2790        | 119,169.7 | \$33,253.6      | \$0      | (\$2,383)         | \$30,870.2       | \$1,092,331.3         |                       |                     |
| 23      | 0.2874        | 118,573.8 | \$34,080.0      | \$0      | (\$2,371)         | \$31,708.5       | \$1,124,039.7         |                       |                     |
| 24      | 0.2960        | 117,981.0 | \$34,926.8      | \$0      | (\$2,360)         | \$32,567.2       | \$1,156,607.0         |                       |                     |
| 25      | 0.3049        | 117,391.1 | \$35,794.8      | \$0      | (\$2,348)         | \$33,447.0       | \$1,190,053.9         |                       |                     |

\* SREC factor is referenced from the NJBPU Solar Alternative Compliance Payment (SACP) schedule.

## Wall High School

### Existing Conditions

|                                                  |                       |
|--------------------------------------------------|-----------------------|
| Current Utility Price (\$/kWh)                   | 0.15                  |
| Actual SREC Market Values (January 2010-Present) | \$110/MWh - \$700/MWh |

### Calculations

|                                        |                     |
|----------------------------------------|---------------------|
| Solar Rating - Zip Code: 8750          | 4.42 kWh/sq-m/day   |
| Solar Capacity Required (kW)           | 1614.585            |
| Roof Space Needed (sq-ft)              | 161,458.50          |
| Annual Solar kWh (PV Watts)            | 1,884,221           |
| Net System installation Cost (\$9/kWh) | \$14,531,265        |
| Electrical Service Modification Cost   | \$100,000           |
| Total System Installation Cost         | <b>\$14,631,265</b> |
| Materials                              | \$10,241,886        |
| Labor                                  | \$4,389,380         |
| Engineers Opinion of Probable Cost     | \$18,289,081        |

### Assumptions

|                           |       |
|---------------------------|-------|
| Annual System Degredation | 0.50% |
| Annual Utility Inflation  | 3.00% |
| Annual Maintenance Costs  | 2%    |

| Year    | Utility Price | Solar kWh   | Utility Savings | SRECS     | Maintenance Costs | Annual Cash Flow | Cummulative Cash Flow | SREC Factor (\$/kWh)* | REC Factor (\$/kWh) |
|---------|---------------|-------------|-----------------|-----------|-------------------|------------------|-----------------------|-----------------------|---------------------|
| Install |               |             |                 |           |                   |                  |                       |                       |                     |
| 1       | 0.1500        | 1,884,220.7 | \$282,633.1     | \$565,266 | (\$37,684)        | \$810,214.9      | \$810,214.9           | \$0.300               |                     |
| 2       | 0.1545        | 1,874,799.6 | \$289,656.5     | \$562,440 | (\$37,496)        | \$814,600.4      | \$1,624,815.3         | \$0.300               |                     |
| 3       | 0.1591        | 1,865,425.6 | \$296,854.5     | \$559,628 | (\$37,309)        | \$819,173.7      | \$2,443,989.0         | \$0.300               |                     |
| 4       | 0.1639        | 1,856,098.5 | \$304,231.3     | \$556,830 | (\$37,122)        | \$823,938.9      | \$3,267,927.9         | \$0.300               |                     |
| 5       | 0.1688        | 1,846,818.0 | \$311,791.5     | \$554,045 | (\$36,936)        | \$828,900.5      | \$4,096,828.4         | \$0.300               |                     |
| 6       | 0.1739        | 1,837,583.9 | \$319,539.5     | \$551,275 | (\$36,752)        | \$834,063.0      | \$4,930,891.4         | \$0.300               |                     |
| 7       | 0.1791        | 1,828,396.0 | \$327,480.1     | \$548,519 | (\$36,568)        | \$839,430.9      | \$5,770,322.3         | \$0.300               |                     |
| 8       | 0.1845        | 1,819,254.0 | \$335,617.9     | \$545,776 | (\$36,385)        | \$845,009.1      | \$6,615,331.4         | \$0.300               |                     |
| 9       | 0.1900        | 1,810,157.7 | \$343,958.0     | \$543,047 | (\$36,203)        | \$850,802.2      | \$7,466,133.6         | \$0.300               |                     |
| 10      | 0.1957        | 1,801,106.9 | \$352,505.4     | \$540,332 | (\$36,022)        | \$856,815.3      | \$8,322,948.9         | \$0.300               |                     |
| 11      | 0.2016        | 1,792,101.4 | \$361,265.2     | \$537,630 | (\$35,842)        | \$863,053.6      | \$9,186,002.5         | \$0.300               |                     |
| 12      | 0.2076        | 1,783,140.9 | \$370,242.6     | \$534,942 | (\$35,663)        | \$869,522.0      | \$10,055,524.5        | \$0.300               |                     |
| 13      | 0.2139        | 1,774,225.2 | \$379,443.1     | \$532,268 | (\$35,485)        | \$876,226.2      | \$10,931,750.7        | \$0.300               |                     |
| 14      | 0.2203        | 1,765,354.1 | \$388,872.3     | \$529,606 | (\$35,307)        | \$883,171.4      | \$11,814,922.1        | \$0.300               |                     |
| 15      | 0.2269        | 1,756,527.3 | \$398,535.8     | \$526,958 | (\$35,131)        | \$890,363.4      | \$12,705,285.6        | \$0.300               |                     |
| 16      | 0.2337        | 1,747,744.6 | \$408,439.4     | \$0       | (\$34,955)        | \$373,484.5      | \$13,078,770.0        |                       |                     |
| 17      | 0.2407        | 1,739,005.9 | \$418,589.1     | \$0       | (\$34,780)        | \$383,809.0      | \$13,462,579.0        |                       |                     |
| 18      | 0.2479        | 1,730,310.9 | \$428,991.0     | \$0       | (\$34,606)        | \$394,384.8      | \$13,856,963.8        |                       |                     |
| 19      | 0.2554        | 1,721,659.3 | \$439,651.5     | \$0       | (\$34,433)        | \$405,218.3      | \$14,262,182.1        |                       |                     |
| 20      | 0.2630        | 1,713,051.0 | \$450,576.8     | \$0       | (\$34,261)        | \$416,315.8      | \$14,678,497.9        |                       |                     |
| 21      | 0.2709        | 1,704,485.8 | \$461,773.6     | \$0       | (\$34,090)        | \$427,683.9      | \$15,106,181.8        |                       |                     |
| 22      | 0.2790        | 1,695,963.4 | \$473,248.7     | \$0       | (\$33,919)        | \$439,329.4      | \$15,545,511.3        |                       |                     |
| 23      | 0.2874        | 1,687,483.5 | \$485,008.9     | \$0       | (\$33,750)        | \$451,259.3      | \$15,996,770.6        |                       |                     |
| 24      | 0.2960        | 1,679,046.1 | \$497,061.4     | \$0       | (\$33,581)        | \$463,480.5      | \$16,460,251.0        |                       |                     |
| 25      | 0.3049        | 1,670,650.9 | \$509,413.4     | \$0       | (\$33,413)        | \$476,000.4      | \$16,936,251.4        |                       |                     |

\* SREC factor is referenced from the NJBPU Solar Alternative Compliance Payment (SACP) schedule.

## Old Mill Elementary School

### Existing Conditions

|                                                  |                       |
|--------------------------------------------------|-----------------------|
| Current Utility Price (\$/kWh)                   | 0.15                  |
| Actual SREC Market Values (January 2010-Present) | \$110/MWh - \$700/MWh |

### Calculations

|                                        |                    |
|----------------------------------------|--------------------|
| Solar Rating - Zip Code: 8750          | 4.42 kWh/sq-m/day  |
| Solar Capacity Required (kW)           | 322.917            |
| Roof Space Needed (sq-ft)              | 32,291.70          |
| Annual Solar kWh (PV Watts)            | 376,844            |
| Net System installation Cost (\$9/kWh) | \$2,906,253        |
| Electrical Service Modification Cost   | \$100,000          |
| Total System Installation Cost         | <b>\$3,006,253</b> |
| Materials                              | \$2,104,377        |
| Labor                                  | \$901,876          |
| Engineers Opinion of Probable Cost     | \$3,757,816        |

### Assumptions

|                           |       |
|---------------------------|-------|
| Annual System Degredation | 0.50% |
| Annual Utility Inflation  | 3.00% |
| Annual Maintenance Costs  | 2%    |

| Year    | Utility Price | Solar kWh | Utility Savings | SRECS     | Maintenance Costs | Annual Cash Flow | Cummulative Cash Flow | SREC Factor (\$/kWh)* | REC Factor (\$/kWh) |
|---------|---------------|-----------|-----------------|-----------|-------------------|------------------|-----------------------|-----------------------|---------------------|
| Install |               |           |                 |           |                   |                  |                       |                       |                     |
| 1       | 0.1500        | 376,844.1 | \$56,526.6      | \$113,053 | (\$7,537)         | \$162,043.0      | \$162,043.0           | \$0.300               |                     |
| 2       | 0.1545        | 374,959.9 | \$57,931.3      | \$112,488 | (\$7,499)         | \$162,920.1      | \$324,963.1           | \$0.300               |                     |
| 3       | 0.1591        | 373,085.1 | \$59,370.9      | \$111,926 | (\$7,462)         | \$163,834.7      | \$488,797.8           | \$0.300               |                     |
| 4       | 0.1639        | 371,219.7 | \$60,846.3      | \$111,366 | (\$7,424)         | \$164,787.8      | \$653,585.6           | \$0.300               |                     |
| 5       | 0.1688        | 369,363.6 | \$62,358.3      | \$110,809 | (\$7,387)         | \$165,780.1      | \$819,365.7           | \$0.300               |                     |
| 6       | 0.1739        | 367,516.8 | \$63,907.9      | \$110,255 | (\$7,350)         | \$166,812.6      | \$986,178.3           | \$0.300               |                     |
| 7       | 0.1791        | 365,679.2 | \$65,496.0      | \$109,704 | (\$7,314)         | \$167,886.2      | \$1,154,064.5         | \$0.300               |                     |
| 8       | 0.1845        | 363,850.8 | \$67,123.6      | \$109,155 | (\$7,277)         | \$169,001.8      | \$1,323,066.3         | \$0.300               |                     |
| 9       | 0.1900        | 362,031.5 | \$68,791.6      | \$108,609 | (\$7,241)         | \$170,160.4      | \$1,493,226.7         | \$0.300               |                     |
| 10      | 0.1957        | 360,221.4 | \$70,501.1      | \$108,066 | (\$7,204)         | \$171,363.1      | \$1,664,589.8         | \$0.300               |                     |
| 11      | 0.2016        | 358,420.3 | \$72,253.0      | \$107,526 | (\$7,168)         | \$172,610.7      | \$1,837,200.5         | \$0.300               |                     |
| 12      | 0.2076        | 356,628.2 | \$74,048.5      | \$106,988 | (\$7,133)         | \$173,904.4      | \$2,011,104.9         | \$0.300               |                     |
| 13      | 0.2139        | 354,845.0 | \$75,888.6      | \$106,454 | (\$7,097)         | \$175,245.2      | \$2,186,350.1         | \$0.300               |                     |
| 14      | 0.2203        | 353,070.8 | \$77,774.5      | \$105,921 | (\$7,061)         | \$176,634.3      | \$2,362,984.4         | \$0.300               |                     |
| 15      | 0.2269        | 351,305.5 | \$79,707.2      | \$105,392 | (\$7,026)         | \$178,072.7      | \$2,541,057.1         | \$0.300               |                     |
| 16      | 0.2337        | 349,548.9 | \$81,687.9      | \$0       | (\$6,991)         | \$74,696.9       | \$2,615,754.0         |                       |                     |
| 17      | 0.2407        | 347,801.2 | \$83,717.8      | \$0       | (\$6,956)         | \$76,761.8       | \$2,692,515.8         |                       |                     |
| 18      | 0.2479        | 346,062.2 | \$85,798.2      | \$0       | (\$6,921)         | \$78,877.0       | \$2,771,392.8         |                       |                     |
| 19      | 0.2554        | 344,331.9 | \$87,930.3      | \$0       | (\$6,887)         | \$81,043.7       | \$2,852,436.4         |                       |                     |
| 20      | 0.2630        | 342,610.2 | \$90,115.4      | \$0       | (\$6,852)         | \$83,263.2       | \$2,935,699.6         |                       |                     |
| 21      | 0.2709        | 340,897.2 | \$92,354.7      | \$0       | (\$6,818)         | \$85,536.8       | \$3,021,236.4         |                       |                     |
| 22      | 0.2790        | 339,192.7 | \$94,649.7      | \$0       | (\$6,784)         | \$87,865.9       | \$3,109,102.3         |                       |                     |
| 23      | 0.2874        | 337,496.7 | \$97,001.8      | \$0       | (\$6,750)         | \$90,251.9       | \$3,199,354.1         |                       |                     |
| 24      | 0.2960        | 335,809.2 | \$99,412.3      | \$0       | (\$6,716)         | \$92,696.1       | \$3,292,050.2         |                       |                     |
| 25      | 0.3049        | 334,130.2 | \$101,882.7     | \$0       | (\$6,683)         | \$95,200.1       | \$3,387,250.3         |                       |                     |

\* SREC factor is referenced from the NJBPU Solar Alternative Compliance Payment (SACP) schedule.

## Wall Intermediate School

### Existing Conditions

|                                                  |                       |
|--------------------------------------------------|-----------------------|
| Current Utility Price (\$/kWh)                   | 0.14                  |
| Actual SREC Market Values (January 2010-Present) | \$110/MWh - \$700/MWh |

### Calculations

|                                        |                    |
|----------------------------------------|--------------------|
| Solar Rating - Zip Code: 8750          | 4.42 kWh/sq-m/day  |
| Solar Capacity Required (kW)           | 861.112            |
| Roof Space Needed (sq-ft)              | 86,111.20          |
| Annual Solar kWh (PV Watts)            | 1,004,918          |
| Net System installation Cost (\$9/kWh) | \$7,750,008        |
| Electrical Service Modification Cost   | \$100,000          |
| Total System Installation Cost         | <b>\$7,850,008</b> |
| Materials                              | \$5,495,006        |
| Labor                                  | \$2,355,002        |
| Engineers Opinion of Probable Cost     | \$9,812,510        |

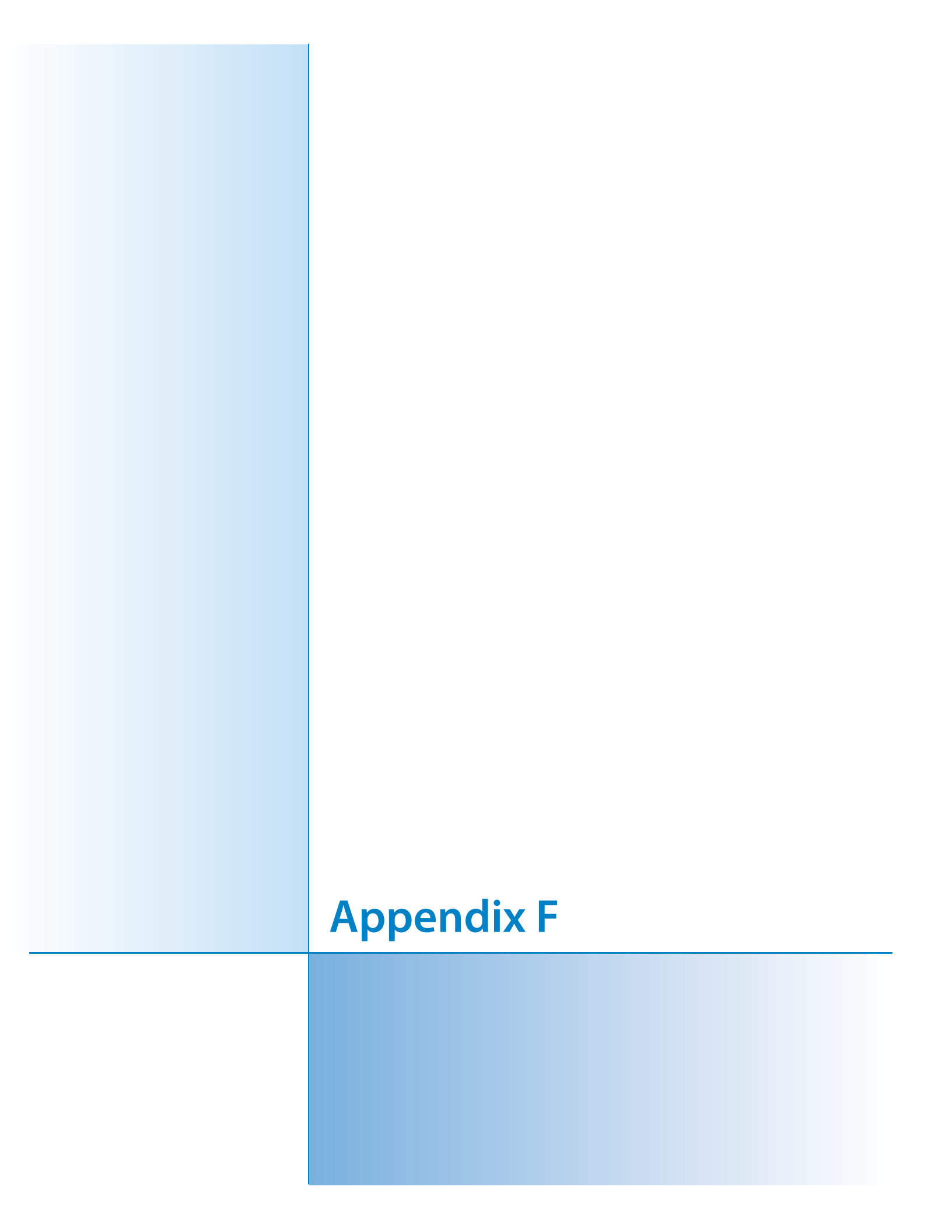
### Assumptions

|                           |       |
|---------------------------|-------|
| Annual System Degredation | 0.50% |
| Annual Utility Inflation  | 3.00% |
| Annual Maintenance Costs  | 2%    |

| Year    | Utility Price | Solar kWh   | Utility Savings | SRECS     | Maintenance Costs | Annual Cash Flow | Cummulative Cash Flow | SREC Factor (\$/kWh)* | REC Factor (\$/kWh) |
|---------|---------------|-------------|-----------------|-----------|-------------------|------------------|-----------------------|-----------------------|---------------------|
| Install |               |             |                 |           |                   |                  |                       |                       |                     |
| 1       | 0.1400        | 1,004,917.7 | \$140,688.5     | \$301,475 | (\$20,098)        | \$422,065.4      | \$422,065.4           | \$0.300               |                     |
| 2       | 0.1442        | 999,893.1   | \$144,184.6     | \$299,968 | (\$19,998)        | \$424,154.7      | \$846,220.1           | \$0.300               |                     |
| 3       | 0.1485        | 994,893.6   | \$147,767.6     | \$298,468 | (\$19,898)        | \$426,337.8      | \$1,272,557.9         | \$0.300               |                     |
| 4       | 0.1530        | 989,919.2   | \$151,439.6     | \$296,976 | (\$19,798)        | \$428,617.0      | \$1,701,174.9         | \$0.300               |                     |
| 5       | 0.1576        | 984,969.6   | \$155,202.9     | \$295,491 | (\$19,699)        | \$430,994.4      | \$2,132,169.2         | \$0.300               |                     |
| 6       | 0.1623        | 980,044.7   | \$159,059.7     | \$294,013 | (\$19,601)        | \$433,472.2      | \$2,565,641.4         | \$0.300               |                     |
| 7       | 0.1672        | 975,144.5   | \$163,012.3     | \$292,543 | (\$19,503)        | \$436,052.8      | \$3,001,694.2         | \$0.300               |                     |
| 8       | 0.1722        | 970,268.8   | \$167,063.2     | \$291,081 | (\$19,405)        | \$438,738.4      | \$3,440,432.6         | \$0.300               |                     |
| 9       | 0.1773        | 965,417.4   | \$171,214.7     | \$289,625 | (\$19,308)        | \$441,531.6      | \$3,881,964.1         | \$0.300               |                     |
| 10      | 0.1827        | 960,590.4   | \$175,469.4     | \$288,177 | (\$19,212)        | \$444,434.7      | \$4,326,398.8         | \$0.300               |                     |
| 11      | 0.1881        | 955,787.4   | \$179,829.8     | \$286,736 | (\$19,116)        | \$447,450.2      | \$4,773,849.0         | \$0.300               |                     |
| 12      | 0.1938        | 951,008.5   | \$184,298.5     | \$285,303 | (\$19,020)        | \$450,580.9      | \$5,224,430.0         | \$0.300               |                     |
| 13      | 0.1996        | 946,253.4   | \$188,878.4     | \$283,876 | (\$18,925)        | \$453,829.3      | \$5,678,259.3         | \$0.300               |                     |
| 14      | 0.2056        | 941,522.2   | \$193,572.0     | \$282,457 | (\$18,830)        | \$457,198.2      | \$6,135,457.5         | \$0.300               |                     |
| 15      | 0.2118        | 936,814.6   | \$198,382.2     | \$281,044 | (\$18,736)        | \$460,690.3      | \$6,596,147.8         | \$0.300               |                     |
| 16      | 0.2181        | 932,130.5   | \$203,312.0     | \$0       | (\$18,643)        | \$184,669.4      | \$6,780,817.2         |                       |                     |
| 17      | 0.2247        | 927,469.8   | \$208,364.4     | \$0       | (\$18,549)        | \$189,815.0      | \$6,970,632.2         |                       |                     |
| 18      | 0.2314        | 922,832.5   | \$213,542.2     | \$0       | (\$18,457)        | \$195,085.6      | \$7,165,717.7         |                       |                     |
| 19      | 0.2383        | 918,218.3   | \$218,848.7     | \$0       | (\$18,364)        | \$200,484.4      | \$7,366,202.1         |                       |                     |
| 20      | 0.2455        | 913,627.2   | \$224,287.1     | \$0       | (\$18,273)        | \$206,014.6      | \$7,572,216.7         |                       |                     |
| 21      | 0.2529        | 909,059.1   | \$229,860.7     | \$0       | (\$18,181)        | \$211,679.5      | \$7,783,896.1         |                       |                     |
| 22      | 0.2604        | 904,513.8   | \$235,572.7     | \$0       | (\$18,090)        | \$217,482.4      | \$8,001,378.6         |                       |                     |
| 23      | 0.2683        | 899,991.2   | \$241,426.7     | \$0       | (\$18,000)        | \$223,426.9      | \$8,224,805.4         |                       |                     |
| 24      | 0.2763        | 895,491.3   | \$247,426.1     | \$0       | (\$17,910)        | \$229,516.3      | \$8,454,321.7         |                       |                     |
| 25      | 0.2846        | 891,013.8   | \$253,574.7     | \$0       | (\$17,820)        | \$235,754.4      | \$8,690,076.1         |                       |                     |

\* SREC factor is referenced from the NJBPU Solar Alternative Compliance Payment (SACP) schedule.



The graphic consists of a large light blue rectangle on the left side of the page. A horizontal line extends from the right edge of this rectangle across the page. A vertical line extends from the bottom of the light blue rectangle down to the bottom of the page. These two lines intersect at the bottom right corner of the light blue rectangle, forming an L-shape. The text "Appendix F" is positioned at this intersection point, with the "F" partially overlapping the vertical line.

## Appendix F



## 2012 Prescriptive Lighting Application

### Customer Information

|                                                                                                                                                 |                                                                                        |                      |                               |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------|-------------------------------|--|
| Company                                                                                                                                         | Electric Utility Serving Applicant<br>choose one                                       | Electric Account No. | Anticipated Installation Date |  |
| Facility Address                                                                                                                                | City                                                                                   | State                | Zip                           |  |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |                                                                                        | Size of Building     |                               |  |
| Company Mailing Address                                                                                                                         | City                                                                                   | State                | Zip                           |  |
| Contact Person (Name/Title)                                                                                                                     | Telephone No.<br>(   )                                                                 | Fax No.<br>(   )     |                               |  |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          | Federal Tax ID# or SSN                                                                 | E-mail Address       |                               |  |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |                      |                               |  |

### Payee Information (must submit W-9 form with application)

|                |              |                                                                           |     |                                           |
|----------------|--------------|---------------------------------------------------------------------------|-----|-------------------------------------------|
| E-mail Address |              |                                                                           |     |                                           |
| Company        | Contact Name | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | Federal Tax ID#                           |
| Street Address | City         | State                                                                     | Zip | Telephone No.<br>(   )   Fax No.<br>(   ) |

### Contractor/Vendor Information (if different from Payee)

|                |              |                                                                           |     |                                           |
|----------------|--------------|---------------------------------------------------------------------------|-----|-------------------------------------------|
| E-mail Address |              |                                                                           |     |                                           |
| Company        | Contact Name | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | Federal Tax ID#                           |
| Street Address | City         | State                                                                     | Zip | Telephone No.<br>(   )   Fax No.<br>(   ) |

### Building Type (circle one)

Education-Primary School; Education-Community College; Education-University; Grocery; Medical-Hospital; Medical-Clinic; Lodging Hotel(Guest Rooms); Lodging Motel; Manufacturing-Light Industrial; Office-Large; Office-Small; Restaurant-Sit Down; Restaurant-Fast Food; Retail-3 Story Large; Retail- Single Story Large; Retail-Small; Storage Conditioned; Storage Unconditioned; Warehouse; Other

### Prescriptive Lighting Incentive

\$ \_\_\_\_\_ Total Incentive (per attached worksheet calculations)

**Note: Prescriptive Lighting Worksheet must accompany this application.**







## Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Incentives for T-5 and T-8 lamps with electronic ballasts are available only for fixtures with a Total Harmonic Distortion of  $\leq 20\%$ .
4. Incentives for retrofits/replacement of existing fixtures  $\leq 250W$  to T-8 lighting requires high performance or reduced wattage lamps (4' only) and ballasts qualified by CEE.  
<http://www.cee1.org/com-lt/com-lt-main.php5>
  - Incentives for delamped T-8 lamps with new reflectors are available only for fixtures with a total Harmonic Distortion of  $< 20\%$ . Electronic ballast replacement required for all eligible de-lamped fixtures. Eligible de-lamping can include reduction in linear lamp feet from existing conditions. For example, 1-8' linear fluorescent lamp can be considered as 2-4' linear lamps. U-bend lamps 4' in total length can be considered as 2-F17/T8 lamps.
  - Electronic ballast replacement is necessary for all eligible de-lamped fixtures.
  - Reduced wattage T8 (28W/25W 4') (1-4 lamps) retrofit requires lamp and ballast replacement.
5. For all eligible lighting devices, fixture or lamp must be listed by UL or other OSHA approved Nationally Recognized Testing Laboratory (NRTL) in accordance with applicable US standards.
6. Requirements for CFL fixtures (must meet all requirements):
  - Fixtures must be new and ENERGY STAR® qualified
  - Fixtures must have replaceable electronic ballasts
  - Total Harmonic Distortion (THD) must not exceed 33%
  - Power factor of the ballast must be no less than 90%
  - The manufacturer must warrant all fixtures for a minimum of 3 years. Warranty does not pertain to lamps or photocells not physically part of the fixture.
  - The installer must warrant installation of fixtures for a minimum of 1 year.
7. Screw-in PAR 38 or 30 Compact Fluorescent Lamps (CFL) with Aluminum Reflectors replacing existing incandescent fixtures.
  - Lamp must be ENERGY STAR® qualified where applicable. For ENERGY STAR® qualified and non-qualified product, ALL the following requirements must be met:
    - The lamp must be new and warranted by the manufacturer for 12 months, or one year
    - Average rated lamp life must be  $\geq 8,000$  hours
    - Power factor of the ballast must be  $> 50\%$
8. Pulse Start Metal Halide (including pole-mounted parking lot lighting) must have a 12% minimum wattage reduction.
9. T-5 or T-8 Fixtures replacing incandescent or T-12 fluorescent fixtures greater than 250 watt or High Intensity Discharge shall comply as follows:
  - T-5 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.0; have reflectivity greater than or equal to 91%; have a minimum 2 lamps; and be designated as F54T5 HO.
  - T-8 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.14; have reflectivity greater than or equal to 91%; have a minimum of 4 lamps; and be designated as F32T8, minimum 32 watts.
10. Incentive requirements for LED fixtures and lamps (excluding LED Exit Signs)
  - LED fixture or lamp must be listed on ENERGY STAR® or Design Lights Consortium Qualified (DLC) Product Lists.
  - For replacement of incandescent, fluorescent and HID only
  - LEDs categories not listed by ENERGY STAR®<sup>(1)</sup>/<sup>(2)</sup> or DLC<sup>(3)</sup> qualified products will not be evaluated through Custom for incentive eligibility.
    - (1) [http://www.energystar.gov/index.cfm?c=ssl.pr\\_commercial](http://www.energystar.gov/index.cfm?c=ssl.pr_commercial)
    - (2) [http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=ILB](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=ILB)
    - (3) [http://www.designlights.org/solidstate.about.QualifiedProductsList\\_Publicv2.php](http://www.designlights.org/solidstate.about.QualifiedProductsList_Publicv2.php)

## ACKNOWLEDGEMENT

CUSTOMER'S SIGNATURE \_\_\_\_\_

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb)**





## Prescriptive Lighting Measures and Incentives

### NEW FIXTURE INCENTIVES

| Type of Fixture                                                                                                                                                                                                                                                                                                                                     |                        | Incentive                                                                                                                                                                   |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Compact Fluorescent                                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| Recessed and Surface-Mounted Compact Fluorescents<br>(New Fixtures Replacing Incandescent Fixtures Only):<br>Only available for hard-wired, electronically ballasted new fixtures with rare earth phosphor lamps and 4-pin based tubes (including: twin tube, quad tube, triple tube, 2D or circline lamps) or GU24 based lamps, THD<33% and BF>0.9 |                        | \$25 per 1-lamp fixture<br>\$30 per 2-lamp or more fixture                                                                                                                  |                                |
| Linear Fluorescent                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                             |                                |
| Type of Old Fixture                                                                                                                                                                                                                                                                                                                                 | Wattage of Old Fixture | Type of New Fixture                                                                                                                                                         | Incentive Per Fixture Replaced |
| HID, T-12, Incandescent                                                                                                                                                                                                                                                                                                                             | ≥ 1000 Watts           | T-5, T-8                                                                                                                                                                    | \$200                          |
| HID, T-12, Incandescent                                                                                                                                                                                                                                                                                                                             | 400-999 Watt           | T-5, T-8                                                                                                                                                                    | \$100                          |
| HID, T-12, Incandescent                                                                                                                                                                                                                                                                                                                             | 250-399 Watt           | T-5, T-8                                                                                                                                                                    | \$50                           |
| HID only                                                                                                                                                                                                                                                                                                                                            | 175-249 Watt           | T-5, T-8                                                                                                                                                                    | \$43                           |
| HID only                                                                                                                                                                                                                                                                                                                                            | 100-174 Watt           | T-5, T-8                                                                                                                                                                    | \$30                           |
| HID only                                                                                                                                                                                                                                                                                                                                            | 75-99 Watt             | T-5, T-8                                                                                                                                                                    | \$16                           |
| T-12 only                                                                                                                                                                                                                                                                                                                                           | <250 Watt              | T-5, T-8 (1-4 lamps)                                                                                                                                                        | \$25                           |
| Induction Lighting                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                             |                                |
| Replacement of HID                                                                                                                                                                                                                                                                                                                                  |                        | \$70 per HID (≥100w) fixture replaced with a new induction fixture. Replacement unit must use 30% less wattage per fixture than existing HID system.                        |                                |
| LED Lighting                                                                                                                                                                                                                                                                                                                                        |                        |                                                                                                                                                                             |                                |
| LED Exit Signs (new fixtures only):                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| For existing facilities with connected load <75 kW                                                                                                                                                                                                                                                                                                  |                        | \$20 per fixture                                                                                                                                                            |                                |
| For existing facilities with connected load ≥ 75 kW                                                                                                                                                                                                                                                                                                 |                        | \$10 per fixture                                                                                                                                                            |                                |
| LED Display Case Lighting                                                                                                                                                                                                                                                                                                                           |                        | \$30 per display case                                                                                                                                                       |                                |
| LED Shelf-Mounted Display and Task Lights                                                                                                                                                                                                                                                                                                           |                        | \$15 per linear foot                                                                                                                                                        |                                |
| LED Portable Desk Lamps                                                                                                                                                                                                                                                                                                                             |                        | \$20 per fixture                                                                                                                                                            |                                |
| LED Wall-Wash Lights                                                                                                                                                                                                                                                                                                                                |                        | \$30 per fixture                                                                                                                                                            |                                |
| LED Recessed Down Lights                                                                                                                                                                                                                                                                                                                            |                        | \$35 per fixture                                                                                                                                                            |                                |
| LED Outdoor Pole/Arm-Mounted Area and Roadway Luminaires                                                                                                                                                                                                                                                                                            |                        | \$175 per fixture                                                                                                                                                           |                                |
| LED Outdoor Pole/Arm-Mounted Decorative Luminaires                                                                                                                                                                                                                                                                                                  |                        | \$175 per fixture                                                                                                                                                           |                                |
| LED Outdoor Wall-Mounted Area Luminaires                                                                                                                                                                                                                                                                                                            |                        | \$100 per fixture                                                                                                                                                           |                                |
| LED Parking Garage Luminaires                                                                                                                                                                                                                                                                                                                       |                        | \$100 per fixture                                                                                                                                                           |                                |
| LED Track or Mono-Point Directional Lighting Fixtures                                                                                                                                                                                                                                                                                               |                        | \$50 per fixture                                                                                                                                                            |                                |
| LED High-Bay and Low-Bay Fixtures for Commercial & Industrial Buildings                                                                                                                                                                                                                                                                             |                        | \$150 per fixture                                                                                                                                                           |                                |
| LED High-Bay-Aisle Lighting                                                                                                                                                                                                                                                                                                                         |                        | \$150 per fixture                                                                                                                                                           |                                |
| LED Bollard Fixtures                                                                                                                                                                                                                                                                                                                                |                        | \$50 per fixture                                                                                                                                                            |                                |
| LED Linear Panels (1x4, 2x2, 2x4 Troffers Only)                                                                                                                                                                                                                                                                                                     |                        | \$50 per fixture                                                                                                                                                            |                                |
| LED Fuel Pump Canopy                                                                                                                                                                                                                                                                                                                                |                        | \$100 per fixture                                                                                                                                                           |                                |
| LED Screw-based & Pin-based (PAR, MR, BR, R) Standards (A-Style) and Decorative (globe, candelabra, etc.) Lamps                                                                                                                                                                                                                                     |                        | \$20 per lamp                                                                                                                                                               |                                |
| LED Refrigerated/Freezer Case Lighting: Incentive for replacement of fluorescent lighting systems in medium or low temperature display cases                                                                                                                                                                                                        |                        | \$30 per 4' fixture<br>\$42 per 5' fixture<br>\$65 per 6' fixture                                                                                                           |                                |
| LED Retrofit Kits                                                                                                                                                                                                                                                                                                                                   |                        | To be evaluated through the custom measures path                                                                                                                            |                                |
| Pulse-Start Metal Halide                                                                                                                                                                                                                                                                                                                            |                        |                                                                                                                                                                             |                                |
| Pulse Start metal Halide (for fixtures ≥ 150 watts)                                                                                                                                                                                                                                                                                                 |                        | \$25 per fixture (includes parking lot lighting)                                                                                                                            |                                |
| RETROFIT INCENTIVES                                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| Compact Fluorescent                                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| Screw-in PAR 38 or PAR 30 (CFL) as per requirement 7.                                                                                                                                                                                                                                                                                               |                        | \$7 per lamp replaced                                                                                                                                                       |                                |
| Linear Fluorescent Lighting                                                                                                                                                                                                                                                                                                                         |                        |                                                                                                                                                                             |                                |
| High-Efficiency Fluorescent Fixtures:<br>For retrofit of T-12 fixtures to T-5 or T-8 with electric ballasts                                                                                                                                                                                                                                         |                        | \$10 per fixture (1-4 lamps retrofits)                                                                                                                                      |                                |
| For retrofit of T-8 fixtures by permanent delamping & new reflectors.<br>Electronic ballast replacement required for all eligible delamped fixtures.                                                                                                                                                                                                |                        | \$15 per fixture                                                                                                                                                            |                                |
| T-12 to T-8 fixtures by permanent delamping & new reflectors.<br>Electronic ballast replacement required for all eligible delamped fixtures.                                                                                                                                                                                                        |                        | \$20 per fixture                                                                                                                                                            |                                |
| Retrofit of existing 32 watt T-8 system to reduced wattage (28w/25w 4')                                                                                                                                                                                                                                                                             |                        | \$10 per fixture (1-4 lamps)                                                                                                                                                |                                |
| Induction Lighting                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                             |                                |
| \$50 per HID (≥100w) fixture retrofitted with induction lamp                                                                                                                                                                                                                                                                                        |                        | \$50 per HID (≥100w) fixture retrofitted with induction lamp, power coupler and generator. Replacement unit must use 30% less wattage per fixture than existing HID system. |                                |
| New Construction & Complete Renovation - Performance based only                                                                                                                                                                                                                                                                                     |                        |                                                                                                                                                                             |                                |



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”.) In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.



Please refer to the program guide on the NJCleanEnergy.com/ssb website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not be eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Electric Chillers Application

## Customer Information

|                                                                                                                                                 |  |                            |  |                                                                                        |  |                               |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|--|
| Company                                                                                                                                         |  | Electric Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |  |
| Facility Address                                                                                                                                |  |                            |  | City                                                                                   |  | State Zip                     |  |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                            |  |                                                                                        |  | Size of Building              |  |
| Company Mailing Address                                                                                                                         |  |                            |  | City                                                                                   |  | State Zip                     |  |
| Contact Person (Name/Title)                                                                                                                     |  |                            |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |  |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                            |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |  |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                            |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |  |

## Payee Information (must submit W-9 form with application)

|                |  |  |  |  |  |              |  |                                                                           |  |                        |  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|--|------------------------|--|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |  | E-mail Address         |  |
| Street Address |  |  |  |  |  | City         |  | State Zip                                                                 |  | Federal Tax ID#        |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Telephone No.<br>(   ) |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Fax No.<br>(   )       |  |

## Contractor/Vendor Information (if different from Payee)

|                |  |  |  |  |  |              |  |                                                                           |  |                        |  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|--|------------------------|--|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |  | E-mail Address         |  |
| Street Address |  |  |  |  |  | City         |  | State Zip                                                                 |  | Federal Tax ID#        |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Telephone No.<br>(   ) |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Fax No.<br>(   )       |  |

## Building Type (circle one)

Commercial-Retail; Commercial-Other than Retail; Office; School-Public K-12; School-University-Public; School-University-Private; School-Other; Hospital;  
Government-Municipality; Government-Other than Municipality; Farm; Non-Profit; Other

## Electric Chiller Equipment Information

| Reason<br>N - New<br>R-Replaced | Type<br>A - Air Cooled<br>(w/Condenser)<br>B - Air Cooled<br>(w/o Condenser)<br>WCR - Water Cooled<br>(Reciprocating)<br>WCS - Water Cooled<br>(Screw/Scroll)<br>WCC - Water Cooled<br>(Centrifugal) | VFD<br>Y/N | Manufacturer | Model    | Location<br>(Bldg/Rm) | Full Load<br>kW/ton | Part<br>Load<br>kW/ton | A<br>Unit<br>Size<br>(Tons) | B<br>Incentive<br>Per Ton<br>(Table) | C<br># of<br>Units | Total<br>Incentives<br>(AxBxC) |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|----------|-----------------------|---------------------|------------------------|-----------------------------|--------------------------------------|--------------------|--------------------------------|
| (Example)<br>N                  | W                                                                                                                                                                                                    | N          | ACME         | RRC/1957 | Mech Rm #4            | 0.54                | 0.49                   | 200                         | \$26                                 | 1                  | 200 x \$26 x 1 = \$5,200       |
| N                               | W                                                                                                                                                                                                    | Y          | ACME         | RRC/1958 | MechRm #5             | 0.55                | 0.40                   | 250                         | \$79                                 | 1                  | 250 x \$79 x 1 = \$19,750      |
|                                 |                                                                                                                                                                                                      |            |              |          |                       |                     |                        |                             |                                      |                    |                                |
|                                 |                                                                                                                                                                                                      |            |              |          |                       |                     |                        |                             |                                      |                    |                                |
|                                 |                                                                                                                                                                                                      |            |              |          |                       |                     |                        |                             |                                      |                    |                                |
|                                 |                                                                                                                                                                                                      |            |              |          |                       |                     |                        |                             |                                      | <b>Total</b>       |                                |



## Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Please submit manufacturer's certified AHRI performance sheet with the application package and mail or fax directly to the Commercial/ Industrial Program Manager.
3. Incentive is available for meeting either the full load kW/ton level or the partial load kW/ton, but not both.
4. Incentives are available for new centrifugal chillers outfitted at the factory with Variable Frequency Drives (VFDs) calculated at the appropriate partial load kW/ton level. There is no extra incentive for the VFD.
5. All water cooled chillers must be submitted at AHRI conditions of:
  - Evaporator - 54 degrees entering water temperature (EWT) and 44 degrees leaving water temperature (LWT)
  - Condenser - 85 degrees EWT and 95 degrees LWT
6. Efficiency requirements to comply with ASHRAE standard 90.1-2007

## Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included

☐ Manufacturer's specification sheets for proposed technology are included

☐ A copy (all pages) of a recent month's utility bill is included

☐ Check this box if you are applying for an ARRA Block Grant.

☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

## Electric Chillers Efficiency Levels and Incentives\*

| Water-Cooled Chillers |                       |                              | Water-Cooled Chillers |                               |              |                        |              | Air-Cooled Chillers  |                        |                        |
|-----------------------|-----------------------|------------------------------|-----------------------|-------------------------------|--------------|------------------------|--------------|----------------------|------------------------|------------------------|
| All Compressor Types  | Incentives (<70 tons) | Incentives (70 to <150 tons) | All Compressor Types  | Incentives (150 to <300 tons) |              | Incentives (≥300 tons) |              | All Compressor Types | Incentives (<150 tons) | Incentives (≥150 tons) |
| kW/Ton                | Full Load \$/Ton      | Full Load \$/Ton             | kW/Ton                | Full Load \$/Ton              | (PLV) \$/Ton | Full Load \$/Ton       | (PLV) \$/Ton | kW/Ton               | Full Load \$/Ton       | Full Load \$/Ton       |
| 0.75                  | \$16                  | \$25                         | 0.56                  | \$16                          |              |                        |              | 1.20                 | \$14                   | \$8                    |
| 0.74                  | \$18                  | \$26                         | 0.55                  | \$21                          |              |                        |              | 1.19                 | \$16                   | \$10                   |
| 0.73                  | \$20                  | \$27                         | 0.54                  | \$26                          |              |                        |              | 1.18                 | \$18                   | \$12                   |
| 0.72                  | \$22                  | \$28                         | 0.53                  | \$31                          |              |                        |              | 1.17                 | \$20                   | \$14                   |
| 0.71                  | \$24                  | \$30                         | 0.52                  | \$36                          |              |                        |              | 1.16                 | \$22                   | \$16                   |
| 0.70                  | \$26                  | \$32                         | 0.51                  | \$41                          |              |                        |              | 1.15                 | \$24                   | \$18                   |
| 0.69                  | \$28                  | \$34                         | 0.50                  | \$46                          | \$16         |                        |              | 1.14                 | \$26                   | \$20                   |
| 0.68                  | \$30                  | \$36                         | 0.49                  | \$51                          | \$22         |                        |              | 1.13                 | \$28                   | \$22                   |
| 0.67                  | \$32                  | \$38                         | 0.48                  | \$56                          | \$29         |                        |              | 1.12                 | \$30                   | \$24                   |
| 0.66                  | \$34                  | \$40                         | 0.47                  | \$61                          | \$35         | \$12                   |              | 1.11                 | \$32                   | \$26                   |
| 0.65                  | \$36                  | \$42                         | 0.46                  | \$66                          | \$41         | \$14                   | \$12         | 1.10                 | \$34                   | \$28                   |
| 0.64                  | \$38                  | \$44                         | 0.45                  | \$71                          | \$47         | \$16                   | \$14         | 1.09                 | \$36                   | \$30                   |
| 0.63                  | \$40                  | \$46                         | 0.44                  | \$76                          | \$54         | \$18                   | \$16         | 1.08                 | \$38                   | \$32                   |
| 0.62                  | \$42                  | \$48                         | 0.43                  | \$81                          | \$60         | \$20                   | \$18         | 1.07                 | \$40                   | \$34                   |
| 0.61                  | \$44                  | \$50                         | 0.42                  | \$86                          | \$66         | \$25                   | \$20         | 1.06                 | \$42                   | \$36                   |
| 0.60                  | \$46                  | \$52                         | 0.41                  | \$91                          | \$72         | \$30                   | \$25         | 1.05                 | \$44                   | \$38                   |
| 0.59                  | \$48                  | \$54                         | 0.40                  | \$96                          | \$79         | \$40                   | \$30         | 1.04                 | \$46                   | \$40                   |
| 0.58                  | \$50                  | \$56                         | 0.39                  | \$101                         | \$85         | \$50                   | \$42         | 1.03                 | \$48                   | \$42                   |
| 0.57                  | \$52                  | \$58                         | 0.38                  | \$106                         | \$91         | \$60                   | \$53         | 1.02                 | \$50                   | \$44                   |
| 0.56                  | \$54                  | \$60                         | 0.37                  | \$111                         | \$97         | \$70                   | \$65         | 1.01                 | \$52                   | \$46                   |
|                       |                       |                              | 0.36                  | \$116                         | \$104        | \$80                   | \$77         |                      |                        |                        |
|                       |                       |                              | 0.35                  | \$121                         | \$110        | \$90                   | \$89         |                      |                        |                        |
|                       |                       |                              | 0.34                  | \$126                         | \$116        | \$100                  | \$100        |                      |                        |                        |
|                       |                       |                              | 0.33                  | \$131                         | \$122        | \$110                  | \$112        |                      |                        |                        |
|                       |                       |                              | 0.32                  | \$136                         | \$129        | \$120                  | \$124        |                      |                        |                        |
|                       |                       |                              | 0.31                  | \$141                         |              | \$130                  |              |                      |                        |                        |
|                       |                       |                              | 0.30                  |                               |              | \$140                  |              |                      |                        |                        |
|                       |                       |                              | 0.29                  |                               |              | \$150                  |              |                      |                        |                        |
|                       |                       |                              | 0.28                  |                               |              | \$160                  |              |                      |                        |                        |
|                       |                       |                              | 0.27                  |                               |              | \$170                  |              |                      |                        |                        |
|                       |                       |                              | 0.26                  |                               |              |                        |              |                      |                        |                        |

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
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Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb)**

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\*Incentives/Requirements subject to change.



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**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



## 2012 Gas Cooling Application

### Customer Information

|                                                                                                                                                 |  |                               |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Gas Utility Serving Applicant |  | Gas Account No.                                                                        |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                               |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                               |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                               |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                               |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                               |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                               |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

### Payee Information (must submit W-9 form with application)

|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  |  |  |  |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |
|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |

### Contractor/Vendor Information (if different from Payee)

|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  |  |  |  |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |
|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |

### Building Type (circle one)

Commercial-Retail; Commercial-Other than Retail; Office; School-Public K-12; School-University-Public; School-University-Private; School-Other; Hospital;  
Government-Municipality; Government-Other than Municipality; Farm; Non-Profit; Other

### Gas Cooling Equipment Information

| Reason<br>N-New<br>R-Replaced | Type<br>A-Absorption<br>D-Desiccant | Manufacturer/<br>Model | Vaccum<br>Boiler<br>Effic. | Boiler<br>Input<br>Rating<br>Therms/hr | Parasitic<br>Load<br>kW/Ton | A<br>Unit<br>Size<br>(Tons) | B<br>Unit Efficiency<br>(C.O.P.) | C<br>Incentive<br>\$/ton<br>(Table) | D<br>Quantity | E<br>Total Incentives<br>(AxCxD) |
|-------------------------------|-------------------------------------|------------------------|----------------------------|----------------------------------------|-----------------------------|-----------------------------|----------------------------------|-------------------------------------|---------------|----------------------------------|
| (Example)<br>N                | A                                   | ACME/GF1011            | 80%                        | 100                                    | 0.1                         | 10                          | 1.1                              | \$450                               | 1             | 10 x \$450 x 1 = \$4,500         |
|                               |                                     |                        |                            |                                        |                             |                             |                                  |                                     |               |                                  |
|                               |                                     |                        |                            |                                        |                             |                             |                                  |                                     |               |                                  |
|                               |                                     |                        |                            |                                        |                             |                             |                                  |                                     |               |                                  |
|                               |                                     |                        |                            |                                        |                             |                             |                                  |                                     | <b>Total</b>  |                                  |

**Specific Program Requirements\*** (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Chiller full and part load efficiencies are determined in accordance with A.H.R.I standard 550/590-2003.
4. Efficiency requirements to comply with ASHRAE 90.1-2007.

**Application Checklist** (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
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**ACKNOWLEDGEMENT****CUSTOMER'S SIGNATURE**

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

**Gas Cooling Equipment Efficiency Levels and Incentives\***

| Gas Absorption Chillers                |                                                         |                                                       | Regenerative Desiccant Units                                         |
|----------------------------------------|---------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------|
| Size Range                             | Indirect-Fired<br>(Incentive &<br>Efficiency Threshold) | Direct-Fired<br>(Incentive &<br>Efficiency Threshold) | Incentive per CFM<br>(based on process airflow)                      |
| <100 tons                              | ≥1.1 F.L. COP<br>\$450/ton                              | ≥1.1 F.L. COP<br>\$450/ton                            | \$1.00 per CFM                                                       |
| 100 to 400 tons                        | ≥1.1 F.L. COP<br>\$230/ton                              | ≥1.1 F.L. COP<br>\$230/ton                            | Eligible when matched with core<br>gas or electric cooling equipment |
| >400 tons<br>(only two-stage chillers) | ≥1.1 F.L. COP<br>\$185/ton                              | ≥1.1 F.L. COP<br>\$185/ton                            |                                                                      |

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**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.



Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.





### Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet and AHRI Certified Net Capacity with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Both indoor and outdoor components of a split system must be replaced to qualify for an incentive.
4. Incentive calculation is based on the Electric Unitary HVAC equipment capacity at AHRI Certified Net Capacity and Rating at operating conditions; it is not based on the nominal Electric Unitary HVAC equipment capacity.
5. Dual Enthalpy Economizer Control incentive is available with new installation on qualifying Electric Unitary HVAC equipment.
6. Efficiency requirements to comply with ASHRAE 90.1-2007.
7. Incentives for qualifying Central DX AC Systems >63 tons for existing buildings only. New construction ineligible

### Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

## Electric Unitary HVAC Efficiency Levels and Incentives\*

| Unitary HVAC/Split Systems   |                       | Water Source Heat Pumps                                                   |                      |
|------------------------------|-----------------------|---------------------------------------------------------------------------|----------------------|
| <5.4 tons                    | 14.0 SEER<br>\$92/ton | ≤5.4 tons                                                                 | 14.0 EER<br>\$81/ton |
| ≥5.4 to <11.25 tons          | 11.5 EER<br>\$73/ton  | >5.4 tons                                                                 | 14.0 EER<br>\$81/ton |
| Air-to-Air Heat Pump Systems |                       | Central DX AC Systems                                                     |                      |
| ≥11.25 to <20 tons           | 11.5 EER<br>\$79/ton  | >30 to 63 tons                                                            | ≥9.5 EER<br>\$40/ton |
| ≥20 to 30 tons               | 10.5 EER<br>\$79/ton  | > 63 tons                                                                 | ≥9.5 EER<br>\$72/ton |
| Packaged Terminal Systems    |                       | Dual Enthalpy Economizer Controls                                         |                      |
| <9,000 BTUH                  | 12.0 EER<br>\$65/ton  | All                                                                       | \$250/unit           |
| ≥9,000 to 12,000 BTUH        | 11.0 EER<br>\$65/ton  | Occupancy Controlled Thermostats for Hospitality/Institutional Facilities |                      |
| >12,000 BTUH                 | 10.0 EER<br>\$65/ton  | All                                                                       | \$75/unit            |

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New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: NJCleanEnergy.com**

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**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

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**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Ground Source Heat Pump Application

## Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

## Payee Information (must submit W-9 form with application)

|                |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |

## Contractor/Vendor Information (if different from Payee)

|                |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |

## Building Type (circle one)

Commercial-Retail; Commercial-Other than Retail; Office; School-Public K-12; School-University-Public; School-University-Private; School-Other; Hospital; Government-Municipality; Government-Other than Municipality; Farm; Non-Profit; Other

## Ground Source Heat Pump Equipment Information

| Manuf.       | Model  | A<br>Unit Size<br>Cooling<br>(Btuh) | B<br>Cooling<br>Efficiency<br>(EER) | C<br>Incentive<br>\$/ton<br>(Table) | D<br>Unit Size<br>Heating<br>(Btuh) | E<br>Heating<br>Efficiency<br>(COP or HSPF) | F<br>Quantity | G<br>Equipment Incentive<br>(AxCxF)<br>12,000           |
|--------------|--------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------------|---------------|---------------------------------------------------------|
| ACME         | HV1011 | 51,000                              | 16                                  | \$450                               | 45,000                              | 3.5                                         | 4             | $\frac{51,000 \times \$450 \times 4}{12,000} = \$7,650$ |
|              |        |                                     |                                     |                                     |                                     |                                             |               |                                                         |
|              |        |                                     |                                     |                                     |                                     |                                             |               |                                                         |
|              |        |                                     |                                     |                                     |                                     |                                             |               |                                                         |
| <b>Total</b> |        |                                     |                                     |                                     |                                     |                                             |               |                                                         |

### Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Performance ratings (EER, Btuh) for qualifying closed loop Ground Source Heat Pump equipment are calculated at 77 degrees Fahrenheit entering water temperature per test procedure ISO-13256-1.
4. No incentives are available for open loop Ground Source Heat Pump equipment.
5. Efficiency requirements to comply with ASHRAE 90.1-2007.

### Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

### Ground Source Heat Pump Equipment Efficiency Levels and Incentives\*

#### Ground Loop & Ground Water Heat Pumps

| Type                                 | Qualifying Efficiency Level | Incentive           |
|--------------------------------------|-----------------------------|---------------------|
| Closed Loop $\geq 16$ EER            | $\geq 16$ EER               | Up to \$450 per ton |
| ENERGY STAR®<br>rated equipment only | $\geq 18$ EER               | Up to \$600 per ton |
|                                      | $\geq 20$ EER               | Up to \$750 per ton |

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Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

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**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Gas Heating Application

## Customer Information

|                                                                                                                                                 |  |                               |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Gas Utility Serving Applicant |  | Gas Account No.                                                                        |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                               |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                               |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                               |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                               |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                               |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                               |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

## Payee Information (must submit W-9 form with application)

|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  |  |  |  |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |

## Contractor/Vendor Information (if different from Payee)

|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  |  |  |  |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |

## Building Type (circle one)

Education; Food Sales; Food Service; Health Care; Lodging; Retail; Office; Public Assembly; Public Order/Safety; Religious Worship; Service; Warehouse/Storage; Other

## Building Location (circle the city closest to building site)

Atlantic City, NJ;   Newark, NJ;   Philadelphia, PA;   Monticello, NY

## Gas Heating Equipment Information

| Reason<br>N–New<br>R–Replaced | Type<br>B–Boiler<br>F–Furnace | Manufacturer | Model  | A<br>Unit<br>Size<br>(MBH<br>Input) | B<br>Unit Efficiency<br>(AFUE)<br>(%) | C<br>Incentive<br>\$/Unit<br>(Table) | D<br>Quantity | E<br>Total Incentives<br>(Cx D) |
|-------------------------------|-------------------------------|--------------|--------|-------------------------------------|---------------------------------------|--------------------------------------|---------------|---------------------------------|
| (Example)<br>N                | F                             | ACME         | GF1011 | 100                                 | 95                                    | \$400                                | 2             | \$400 x 2 = \$800               |
| R                             | B                             | ACME         | B1500  | 1,500 MBH                           | 85                                    | \$1.75                               | 2             | 1500 x \$1.75 x 2 = \$5,250     |
|                               |                               |              |        |                                     |                                       |                                      |               |                                 |
|                               |                               |              |        |                                     |                                       |                                      |               |                                 |
| <b>Total</b>                  |                               |              |        |                                     |                                       |                                      |               |                                 |



**Specific Program Requirements\*** (These requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the Program Guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Market Manager.

**Application Checklist** (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

**ACKNOWLEDGEMENT****CUSTOMER'S SIGNATURE**

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

**Gas Heating Equipment Efficiency Levels and Incentives\*****Gas Fired Boilers**

| Capacity - MBH       | Minimum Efficiency                                           | Incentive                                          |
|----------------------|--------------------------------------------------------------|----------------------------------------------------|
| <300 MBH             | 85% AFUE                                                     | \$2.00 per MBH<br>but not less than \$300 per unit |
| ≥ 300 MBH - 1500 MBH | 85% AFUE for Hot Water boilers<br>84% AFUE for Steam boilers | \$1.75 per MBH                                     |
| >1500 - ≤ 4000 MBH   | 84% AFUE for Hot Water boilers<br>83% AFUE for Steam boilers | \$1.00 per MBH                                     |
| > 4000 MBH           | See Custom Measure Path                                      |                                                    |

**Gas Furnaces** – Minimum Efficiency ≥ 95% AFUE,  
≥ 2.0% Fan Efficiency, ENERGY STAR®

| Capacity                    | Incentive         |
|-----------------------------|-------------------|
| No size/capacity limitation | \$400 per furnace |

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Market Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our web site: [NJCleanEnergy.com](http://NJCleanEnergy.com)**

New Jersey SmartStart Buildings® is a registered trademark. Use of the mark without the permission of the New Jersey Board of Public Utilities, Office of Clean Energy is prohibited.

\*Incentives/Requirements subject to change.



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Variable Frequency Drives Application

## Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

## Payee Information (must submit W-9 form with application)

|                |  |              |       |                                                                           |                        |                  |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address   |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

## Contractor/Vendor Information (if different from Payee)

|                |  |              |       |                                                                           |                        |                  |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address   |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

## Building Type (circle one)

Commercial-Retail; Commercial-Other than Retail; Office; School-Public K-12; School-University-Public; School-University-Private; School-Other; Hospital;  
 Government-Municipality; Government-Other than Municipality; Farm; Non-Profit; Other

## Variable Frequency Drive Information

| Reason<br>N-New<br>R-Retrofit | Type of Usage<br>F – Airfoil/Backward Inclined fan<br>C – Forward Curved Fan<br>P – Chilled Water Pump<br>A – Air Compressor<br>T – Cooling Tower | Manufacturer | Model    | Annual Operating Hours | Drive Efficiency % | Motor Efficiency % | Location (Bldg/Rm) | A<br>HP of Controlled Motors | B<br>Incentive per HP (Table) | C<br># of Units | Total Incentives (AxBxC) |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|------------------------|--------------------|--------------------|--------------------|------------------------------|-------------------------------|-----------------|--------------------------|
| (Example)<br>N                | F                                                                                                                                                 | ACME         | RR/C1957 | 4,000                  | 97                 | 94.1               | Mech. Rm. #4       | 30                           | \$65                          | 2               | 30 x \$65 x 2 = \$3,900  |
|                               |                                                                                                                                                   |              |          |                        |                    |                    |                    |                              |                               |                 |                          |
|                               |                                                                                                                                                   |              |          |                        |                    |                    |                    |                              |                               |                 |                          |
|                               |                                                                                                                                                   |              |          |                        |                    |                    |                    |                              |                               |                 |                          |
|                               |                                                                                                                                                   |              |          |                        |                    |                    |                    |                              |                               |                 |                          |
| <b>Total</b>                  |                                                                                                                                                   |              |          |                        |                    |                    |                    |                              |                               |                 |                          |

## Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
  2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
  3. Incentives for VFDs in HVAC VAV systems, are available only for installing a VFD on existing VAV systems as an add-on measure. Replacement of an existing VFD on VAV systems and installations on VAV systems in new construction are not eligible for incentives.
  4. The Variable Frequency Drive (VFD) incentive for cooling towers is available for existing single speed motors only. Replacement of two speed motor with single speed/VFD motor, replacement of existing VFD and new construction do not qualify.
  5. The Variable Frequency Drive (VFD) incentive for pumps is available only for VFDs installed on centrifugal chilled water pump motors for HVAC systems.
  6. The VFDs must be installed in a system (VAV air supply or chilled water pumping systems) that incorporates pressure sensors (or other applicable sensor devices) in the flow stream.
  7. Incentives are available for new air or water cooled, single or double stage, oil lubricated or oil free twin rotor screw air compressors outfitted with VFDs (providing compressed air for typical plant air use).
  8. Replacement of VFD on an existing air compressor that had VFD control is not eligible for incentives.
  9. Incentives for retrofitting an existing qualified air compressor with VFD control may be available through the custom electric equipment program.
  10. VFD controlled compressors with premium efficiency motors may be eligible for a premium motor incentive in addition to this prescriptive VFD incentive.
  11. Only one VFD controlled air compressor will be eligible for an incentive for each compressed air system.
  12. The applicant shall provide sufficient documentation to demonstrate that a VFD controlled air compressor operates, at a minimum, for 2000 hours annually. Documentation may include P&IDs, Control Logic Diagrams, and Plant Operating Schedules.
- For All VFDs:
13. The VFD must have either an input line reactor or isolation transformer.

## Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

## Variable Frequency Drive Incentives\*

### Centrifugal Fan Applications on Variable Air Volume HVAC Systems

| Cumulative Motor HP Controlled by Each VFD | Incentive \$/Cumulative HP Controlled |
|--------------------------------------------|---------------------------------------|
| 5 to <10 hp                                | \$155 per hp                          |
| 10 to <20 hp                               | \$120 per hp                          |
| 20+ hp                                     | \$65 per hp                           |

### Cooling Tower Fan Systems

|         |                       |
|---------|-----------------------|
| ≥ 10 hp | \$60 per VFD rated hp |
|---------|-----------------------|

### Chilled Water Pump Motors for HVAC Systems

|        |                       |
|--------|-----------------------|
| 20+ hp | \$60 per VFD rated hp |
|--------|-----------------------|

### Rotary Screw Air Compressors

|               |                |
|---------------|----------------|
| 25 to 29 hp   | Up to \$5,250  |
| 30 to 39 hp   | Up to \$6,000  |
| 40 to 49 hp   | Up to \$7,200  |
| 50 to 59 hp   | Up to \$8,000  |
| 60 to 199 hp  | Up to \$9,000  |
| 200 to 249 hp | Up to \$10,000 |
| ≥ 250 hp      | Up to \$12,500 |

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
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Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com](http://NJCleanEnergy.com)**

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\*Incentives/Requirements subject to change.



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.



Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Gas Water Heating Application

## Customer Information

|                                                                                                                                                 |  |                               |  |                                                                                        |  |                               |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|--|
| Company                                                                                                                                         |  | Gas Utility Serving Applicant |  | Gas Account No.                                                                        |  | Anticipated Installation Date |  |
| Facility Address                                                                                                                                |  |                               |  | City                                                                                   |  | State Zip                     |  |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                               |  |                                                                                        |  | Size of Building              |  |
| Company Mailing Address                                                                                                                         |  |                               |  | City                                                                                   |  | State Zip                     |  |
| Contact Person (Name/Title)                                                                                                                     |  |                               |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |  |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                               |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |  |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                               |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |  |

## Payee Information (must submit W-9 form with application)

|                |  |              |  |                                                                           |  |                  |  |
|----------------|--|--------------|--|---------------------------------------------------------------------------|--|------------------|--|
| Company        |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |  | E-mail Address   |  |
| Street Address |  | City         |  | State Zip                                                                 |  | Federal Tax ID#  |  |
|                |  |              |  |                                                                           |  | Fax No.<br>(   ) |  |

## Contractor/Vendor Information (if different from Payee)

|                |  |              |  |                                                                           |  |                  |  |
|----------------|--|--------------|--|---------------------------------------------------------------------------|--|------------------|--|
| Company        |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |  | E-mail Address   |  |
| Street Address |  | City         |  | State Zip                                                                 |  | Federal Tax ID#  |  |
|                |  |              |  |                                                                           |  | Fax No.<br>(   ) |  |

## Building Type (circle one)

Education; Food Sales; Food Service; Health Care; Lodging; Retail; Office; Public Assembly; Public Order/Safety; Religious Worship; Service; Warehouse/Storage; Other

## Building Location (circle the city closest to building site)

Atlantic City, NJ;   Newark, NJ;   Philadelphia, PA;   Monticello, NY

## Gas Water Heating Equipment Information

| Reason<br>N-New<br>R-Replaced | Type<br>0 - Booster Heater<br>1 - Water Heater<br>2 - Tankless | Manuf. | Model   | Area Served by Heater<br>(1-13, see legend) | A<br>Unit Size<br>B-MBHH Input<br>W-Size Gallons | B<br>Efficiency<br>(EF or AFUE) | C<br>Incentive<br>(Table) | D<br>Quantity | Total Incentive<br>Booster = AxCxD<br>WH≤50 G = CxD<br>WH>50 G = AxCxD<br>Tankless = CxD |
|-------------------------------|----------------------------------------------------------------|--------|---------|---------------------------------------------|--------------------------------------------------|---------------------------------|---------------------------|---------------|------------------------------------------------------------------------------------------|
| (Example)<br>N                | 0                                                              | ACME   | GF1011  | 13                                          | 100                                              | N/A                             | \$35                      | 1             | \$35 x 100 = \$3,500                                                                     |
| R                             | 1                                                              | ACME   | DHW1500 | 1                                           | 1,500                                            | 85                              | \$1.75                    | 2             | 1,500 x 1.75 x 2 = \$5,250                                                               |
| R                             | 2                                                              | ACME   | BWH50   | 7                                           | 50                                               | 82                              | \$300                     | 1             | \$300 x 1 = \$300                                                                        |
|                               |                                                                |        |         |                                             |                                                  |                                 |                           |               |                                                                                          |
|                               |                                                                |        |         |                                             |                                                  |                                 |                           |               |                                                                                          |
|                               |                                                                |        |         |                                             |                                                  |                                 |                           |               |                                                                                          |
|                               |                                                                |        |         |                                             |                                                  |                                 |                           |               |                                                                                          |
| <b>Total</b>                  |                                                                |        |         |                                             |                                                  |                                 |                           |               |                                                                                          |



### Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.

### Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

### Area Legend

- |                 |                             |                           |
|-----------------|-----------------------------|---------------------------|
| 1- Education    | 6- Retail (Other than Mall) | 11- Service               |
| 2- Food Sales   | 7- Office                   | 12- Warehouse and Storage |
| 3- Food Service | 8- Public Assembly          | 13- Other                 |
| 4- Health Care  | 9- Public Order and Safety  |                           |
| 5- Lodging      | 10- Religious Worship       |                           |

### Gas Water Heating Efficiency Levels and Incentives\*

| Gas-Fired Water Booster Heaters |              | Gas Water Heaters ≤ 50 Gallons |                       |
|---------------------------------|--------------|--------------------------------|-----------------------|
| Capacity - MBH                  | Incentive    | Capacity - MBH                 | Incentive             |
| ≤100 MBH                        | \$35 per MBH | 0.67 or better Energy Factor   | \$50 per water heater |
| >100 MBH                        | \$17 per MBH | Size limit: ≤50 gallons        |                       |

| Gas Water Heaters > 50 Gallons |                    |                                            | Tankless Water Heater                         |                                 |
|--------------------------------|--------------------|--------------------------------------------|-----------------------------------------------|---------------------------------|
| Capacity - MBH                 | Minimum Efficiency | Incentive                                  | Minimum Efficiency                            | Incentive                       |
| >50 gallons - <300 MBH         | 85% AFUE           | \$2.00 per MBH but not less than \$50/unit | ≥ 82% energy factor or 90% Thermal Efficiency | \$300 per tankless water heater |
| ≥ 300 MBH - 1500 MBH           | 85% AFUE           | \$1.75 per MBH                             |                                               |                                 |
| >1500 - ≤ 4000 MBH             | 84% AFUE           | \$1.00 per MBH                             |                                               |                                 |

This incentive is only available for the replacement of existing, free-standing water heaters.

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb)**

New Jersey SmartStart Buildings® is a registered trademark. Use of the mark without the permission of the New Jersey Board of Public Utilities, Office of Clean Energy is prohibited.  
\*Incentives/Requirements subject to change.



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Premium Motors Application

## Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

## Payee Information (must submit W-9 form with application)

|                |  |              |       |                                                                           |                        |                          |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|--------------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address           |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Federal Tax ID#<br>(   ) |  |

## Contractor/Vendor Information (if different from Payee)

|                |  |              |       |                                                                           |                        |                          |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|--------------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address           |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Federal Tax ID#<br>(   ) |  |

## Building Type (circle one)

Commercial-Retail; Commercial-Other than Retail; Office; School-Public K-12; School-University-Public; School-University-Private; School-Other; Hospital; Government-Municipality; Government-Other than Municipality; Farm; Non-Profit; Other

## Premium Motor Information

| Reason*        | Type*<br>ODP,<br>TEFC<br>or<br>ECM | Manuf.* | Model*   | Function*   | Location        | Size*<br>(HP) | Speed<br>(RPM) | NEMA<br>Nominal<br>Efficiency<br>(%) | Has<br>VFD | Annual<br>Run<br>Hours<br>Y/N<br>(2,000 min.) | Incentive<br>Per Motor<br>- Hours | Quantity<br>(Table) | Total<br>Incentives |
|----------------|------------------------------------|---------|----------|-------------|-----------------|---------------|----------------|--------------------------------------|------------|-----------------------------------------------|-----------------------------------|---------------------|---------------------|
| (Example)<br>N | TEFC                               | ACME    | RR/C1957 | HVAC Pump   | Mech. Rm. #4    | 30            | 1800           | 93.6                                 | N          | 4400                                          | \$150                             | 1                   | \$150               |
| R              | ECM                                | GE      | 26-ECM-6 | Ref/Freezer | Freezer Case #2 | 1/15          |                |                                      |            | 6000                                          | \$40                              | 3                   | \$120               |
|                |                                    |         |          |             |                 |               |                |                                      |            |                                               |                                   |                     |                     |
|                |                                    |         |          |             |                 |               |                |                                      |            |                                               |                                   |                     |                     |
|                |                                    |         |          |             |                 |               |                |                                      |            |                                               |                                   |                     |                     |
|                |                                    |         |          |             |                 |               |                |                                      |            |                                               |                                   |                     |                     |
| Total          |                                    |         |          |             |                 |               |                |                                      |            |                                               |                                   |                     |                     |

\*Required fields for ECM

**Specific Program Requirements\*** (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Incentives are only available for qualifying Premium Motors that operate at least 2000 run hours annually.

**Application Checklist** (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

**ACKNOWLEDGEMENT**

CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

**Qualifying Premium Motor Efficiencies and Incentives\***

| Premium Motor Incentives<br>Open Drip-Proof (ODP) |                         |       |       |                                     |            | Premium Motor Incentives<br>Totally Enclosed Fan-Cooled (TEFC) |       |       |                                     |  |
|---------------------------------------------------|-------------------------|-------|-------|-------------------------------------|------------|----------------------------------------------------------------|-------|-------|-------------------------------------|--|
| Size<br>HP                                        | Speed (RPM)             |       |       | Customer<br>Incentive<br>(\$/Motor) | Size<br>HP | Speed (RPM)                                                    |       |       | Customer<br>Incentive<br>(\$/Motor) |  |
|                                                   | 1200                    | 1800  | 3600  |                                     |            | 1200                                                           | 1800  | 3600  |                                     |  |
|                                                   | NEMA Nominal Efficiency |       |       |                                     |            | NEMA Nominal Efficiency                                        |       |       |                                     |  |
| 1                                                 | 82.5%                   | 85.5% | 77.0% | \$45                                | 1          | 82.5%                                                          | 85.5% | 77.0% | \$50                                |  |
| 1.5                                               | 86.5%                   | 86.5% | 84.0% | \$45                                | 1.5        | 87.5%                                                          | 86.5% | 84.0% | \$50                                |  |
| 2                                                 | 87.5%                   | 86.5% | 85.5% | \$54                                | 2          | 88.5%                                                          | 86.5% | 85.5% | \$60                                |  |
| 3                                                 | 88.5%                   | 89.5% | 85.5% | \$54                                | 3          | 89.5%                                                          | 89.5% | 86.5% | \$60                                |  |
| 5                                                 | 89.5%                   | 89.5% | 86.5% | \$54                                | 5          | 89.5%                                                          | 89.5% | 88.5% | \$60                                |  |
| 7.5                                               | 90.2%                   | 91.0% | 88.5% | \$81                                | 7.5        | 91.0%                                                          | 91.7% | 89.5% | \$90                                |  |
| 10                                                | 91.7%                   | 91.7% | 89.5% | \$90                                | 10         | 91.0%                                                          | 91.7% | 90.2% | \$100                               |  |
| 15                                                | 91.7%                   | 93.0% | 90.2% | \$104                               | 15         | 91.7%                                                          | 92.4% | 91.0% | \$115                               |  |
| 20                                                | 92.4%                   | 93.0% | 91.0% | \$113                               | 20         | 91.7%                                                          | 93.0% | 91.0% | \$125                               |  |
| 25                                                | 93.0%                   | 93.6% | 91.7% | \$117                               | 25         | 93.0%                                                          | 93.6% | 91.7% | \$130                               |  |
| 30                                                | 93.6%                   | 94.1% | 91.7% | \$135                               | 30         | 93.0%                                                          | 93.6% | 91.7% | \$150                               |  |
| 40                                                | 94.1%                   | 94.1% | 92.4% | \$162                               | 40         | 94.1%                                                          | 94.1% | 92.4% | \$180                               |  |
| 50                                                | 94.1%                   | 94.5% | 93.0% | \$198                               | 50         | 94.1%                                                          | 94.5% | 93.0% | \$220                               |  |
| 60                                                | 94.5%                   | 95.0% | 93.6% | \$234                               | 60         | 94.5%                                                          | 95.0% | 93.6% | \$260                               |  |
| 75                                                | 94.5%                   | 95.0% | 93.6% | \$270                               | 75         | 94.5%                                                          | 95.4% | 93.6% | \$300                               |  |
| 100                                               | 95.0%                   | 95.4% | 93.6% | \$360                               | 100        | 95.0%                                                          | 95.4% | 94.1% | \$400                               |  |
| 125                                               | 95.0%                   | 95.4% | 94.1% | \$540                               | 125        | 95.0%                                                          | 95.4% | 95.0% | \$600                               |  |
| 150                                               | 95.4%                   | 95.8% | 94.1% | \$630                               | 150        | 95.8%                                                          | 95.8% | 95.0% | \$700                               |  |
| 200                                               | 95.4%                   | 95.8% | 95.0% | \$630                               | 200        | 95.8%                                                          | 96.2% | 95.4% | \$700                               |  |

**Fractional Motor Incentives Electronic Commutated Motors (ECM)**

| Size<br>HP | Customer Incentive (\$/Motor)                                                            |
|------------|------------------------------------------------------------------------------------------|
| <1<br>HP   | \$40 per ECM for replacement of existing shaded-pole motor in refrigerated/freezer cases |

**Motors > 200 HP must follow the Custom Electric Equipment Path**  
**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
 c/o TRC Energy Services  
 900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
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**Visit our website: [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb)**

New Jersey SmartStart Buildings® is a registered trademark. Use of the mark without the permission of the New Jersey Board of Public Utilities, Office of Clean Energy is prohibited.

\*Incentives/Requirements subject to change.



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.



Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



## 2012 Prescriptive Lighting Application

### Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

### Payee Information (must submit W-9 form with application)

|                                                           |  |              |       |                                                                           |                        |                  |  |
|-----------------------------------------------------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Payee Information (must submit W-9 form with application) |  |              |       |                                                                           |                        | E-mail Address   |  |
| Company                                                   |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | Federal Tax ID#  |  |
| Street Address                                            |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

### Contractor/Vendor Information (if different from Payee)

|                                                         |  |              |       |                                                                           |                        |                  |  |
|---------------------------------------------------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Contractor/Vendor Information (if different from Payee) |  |              |       |                                                                           |                        | E-mail Address   |  |
| Company                                                 |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | Federal Tax ID#  |  |
| Street Address                                          |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

### Building Type (circle one)

Education-Primary School; Education-Community College; Education-University; Grocery; Medical-Hospital; Medical-Clinic; Lodging Hotel(Guest Rooms); Lodging Motel; Manufacturing-Light Industrial; Office-Large; Office-Small; Restaurant-Sit Down; Restaurant-Fast Food; Retail-3 Story Large; Retail- Single Story Large; Retail-Small; Storage Conditioned; Storage Unconditioned; Warehouse; Other

### Prescriptive Lighting Incentive

**\$\_\_\_\_\_ Total Incentive (per attached worksheet calculations)**

**Note: Prescriptive Lighting Worksheet must accompany this application.**





## Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Incentives for T-5 and T-8 lamps with electronic ballasts are available only for fixtures with a Total Harmonic Distortion of  $\leq 20\%$ .
4. Incentives for retrofits/replacement of existing fixtures  $\leq 250W$  to T-8 lighting requires high performance or reduced wattage lamps (4' only) and ballasts qualified by CEE.  
<http://www.cee1.org/com/com-lt/com-lt-main.php3>
  - Incentives for delamped T-8 lamps with new reflectors are available only for fixtures with a total Harmonic Distortion of  $< 20\%$ . Electronic ballast replacement required for all eligible de-lamped fixtures. Eligible de-lamping can include reduction in linear lamp feet from existing conditions. For example, 1-8' linear fluorescent lamp can be considered as 2-4' linear lamps. U-bend lamps 4' in total length can be considered as 2-F17/T8 lamps.
  - Electronic ballast replacement is necessary for all eligible de-lamped fixtures.
  - Reduced wattage T8 (28W/25W 4') (1-4 lamps) retrofit requires lamp and ballast replacement.
5. For all eligible lighting devices, fixture or lamp must be listed by UL or other OSHA approved Nationally Recognized Testing Laboratory (NRTL) in accordance with applicable US standards.
6. Requirements for CFL fixtures (must meet all requirements):
  - Fixtures must be new and ENERGY STAR® qualified
  - Fixtures must have replaceable electronic ballasts
  - Total Harmonic Distortion (THD) must not exceed 33%
  - Power factor of the ballast must be no less than 90%
  - The manufacturer must warrant all fixtures for a minimum of 3 years. Warranty does not pertain to lamps or photocells not physically part of the fixture.
  - The installer must warrant installation of fixtures for a minimum of 1 year.
7. Screw-in PAR 38 or 30 Compact Fluorescent Lamps (CFL) with Aluminum Reflectors replacing existing incandescent fixtures.
  - Lamp must be ENERGY STAR® qualified where applicable. For ENERGY STAR® qualified and non-qualified product, ALL the following requirements must be met:
    - The lamp must be new and warranted by the manufacturer for 12 months, or one year
    - Average rated lamp life must be  $\geq 8,000$  hours
    - Power factor of the ballast must be  $> 50\%$
8. Pulse Start Metal Halide (including pole-mounted parking lot lighting) must have a 12% minimum wattage reduction.
9. T-5 or T-8 Fixtures replacing incandescent or T-12 fluorescent fixtures greater than 250 watt or High Intensity Discharge shall comply as follows:
  - T-5 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.0; have reflectivity greater than or equal to 91%; have a minimum 2 lamps; and be designated as F54T5 HO.
  - T-8 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.14; have reflectivity greater than or equal to 91%; have a minimum of 4 lamps; and be designated as F32T8, minimum 32 watts.
10. Incentive requirements for LED fixtures and lamps (excluding LED Exit Signs)
  - LED fixture or lamp must be listed on ENERGY STAR® or Design Lights Consortium Qualified (DLC) Product Lists.
  - For replacement of incandescent, fluorescent and HID only
  - LEDs categories not listed by ENERGY STAR®<sup>(1)(2)</sup> or DLC<sup>(3)</sup> qualified products will not be evaluated through Custom for incentive eligibility.
    - (1) [http://www.energystar.gov/index.cfm?c=ssl.pr\\_commercial](http://www.energystar.gov/index.cfm?c=ssl.pr_commercial)
    - (2) [http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=LB](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=LB)
    - (3) [http://www.designlights.org/solidstate.about.QualifiedProductsList\\_Publicv2.php](http://www.designlights.org/solidstate.about.QualifiedProductsList_Publicv2.php)

## Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

## ACKNOWLEDGEMENT

CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

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## Prescriptive Lighting Measures and Incentives

### NEW FIXTURE INCENTIVES

| Type of Fixture                                                                                                                                                                                                                                                                                                                                     |                        | Incentive                                                                                                                                                                   |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Compact Fluorescent                                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| Recessed and Surface-Mounted Compact Fluorescents<br>(New Fixtures Replacing Incandescent Fixtures Only):<br>Only available for hard-wired, electronically ballasted new fixtures with rare earth phosphor lamps and 4-pin based tubes (including: twin tube, quad tube, triple tube, 2D or circline lamps) or GU24 based lamps, THD<33% and BF>0.9 |                        | \$25 per 1-lamp fixture<br>\$30 per 2-lamp or more fixture                                                                                                                  |                                |
| Linear Fluorescent                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                             |                                |
| Type of Old Fixture                                                                                                                                                                                                                                                                                                                                 | Wattage of Old Fixture | Type of New Fixture                                                                                                                                                         | Incentive Per Fixture Replaced |
| HID, T-12, Incandescent                                                                                                                                                                                                                                                                                                                             | ≥ 1000 Watts           | T-5, T-8                                                                                                                                                                    | \$200                          |
| HID, T-12, Incandescent                                                                                                                                                                                                                                                                                                                             | 400-999 Watt           | T-5, T-8                                                                                                                                                                    | \$100                          |
| HID, T-12, Incandescent                                                                                                                                                                                                                                                                                                                             | 250-399 Watt           | T-5, T-8                                                                                                                                                                    | \$50                           |
| HID only                                                                                                                                                                                                                                                                                                                                            | 175-249 Watt           | T-5, T-8                                                                                                                                                                    | \$43                           |
| HID only                                                                                                                                                                                                                                                                                                                                            | 100-174 Watt           | T-5, T-8                                                                                                                                                                    | \$30                           |
| HID only                                                                                                                                                                                                                                                                                                                                            | 75-99 Watt             | T-5, T-8                                                                                                                                                                    | \$16                           |
| T-12 only                                                                                                                                                                                                                                                                                                                                           | <250 Watt              | T-5, T-8 (1-4 lamps)                                                                                                                                                        | \$25                           |
| Induction Lighting                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                             |                                |
| Replacement of HID                                                                                                                                                                                                                                                                                                                                  |                        | \$70 per HID (≥100w) fixture replaced with a new induction fixture. Replacement unit must use 30% less wattage per fixture than existing HID system.                        |                                |
| LED Lighting                                                                                                                                                                                                                                                                                                                                        |                        |                                                                                                                                                                             |                                |
| LED Exit Signs (new fixtures only):                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| For existing facilities with connected load <75 kW                                                                                                                                                                                                                                                                                                  |                        | \$20 per fixture                                                                                                                                                            |                                |
| For existing facilities with connected load ≥ 75 kW                                                                                                                                                                                                                                                                                                 |                        | \$10 per fixture                                                                                                                                                            |                                |
| LED Display Case Lighting                                                                                                                                                                                                                                                                                                                           |                        | \$30 per display case                                                                                                                                                       |                                |
| LED Shelf-Mounted Display and Task Lights                                                                                                                                                                                                                                                                                                           |                        | \$15 per linear foot                                                                                                                                                        |                                |
| LED Portable Desk Lamps                                                                                                                                                                                                                                                                                                                             |                        | \$20 per fixture                                                                                                                                                            |                                |
| LED Wall-Wash Lights                                                                                                                                                                                                                                                                                                                                |                        | \$30 per fixture                                                                                                                                                            |                                |
| LED Recessed Down Lights                                                                                                                                                                                                                                                                                                                            |                        | \$35 per fixture                                                                                                                                                            |                                |
| LED Outdoor Pole/Arm-Mounted Area and Roadway Luminaires                                                                                                                                                                                                                                                                                            |                        | \$175 per fixture                                                                                                                                                           |                                |
| LED Outdoor Pole/Arm-Mounted Decorative Luminaires                                                                                                                                                                                                                                                                                                  |                        | \$175 per fixture                                                                                                                                                           |                                |
| LED Outdoor Wall-Mounted Area Luminaires                                                                                                                                                                                                                                                                                                            |                        | \$100 per fixture                                                                                                                                                           |                                |
| LED Parking Garage Luminaires                                                                                                                                                                                                                                                                                                                       |                        | \$100 per fixture                                                                                                                                                           |                                |
| LED Track or Mono-Point Directional Lighting Fixtures                                                                                                                                                                                                                                                                                               |                        | \$50 per fixture                                                                                                                                                            |                                |
| LED High-Bay and Low-Bay Fixtures for Commercial & Industrial Buildings                                                                                                                                                                                                                                                                             |                        | \$150 per fixture                                                                                                                                                           |                                |
| LED High-Bay-Aisle Lighting                                                                                                                                                                                                                                                                                                                         |                        | \$150 per fixture                                                                                                                                                           |                                |
| LED Bollard Fixtures                                                                                                                                                                                                                                                                                                                                |                        | \$50 per fixture                                                                                                                                                            |                                |
| LED Linear Panels (1x4, 2x2, 2x4 Troffers Only)                                                                                                                                                                                                                                                                                                     |                        | \$50 per fixture                                                                                                                                                            |                                |
| LED Fuel Pump Canopy                                                                                                                                                                                                                                                                                                                                |                        | \$100 per fixture                                                                                                                                                           |                                |
| LED Screw-based & Pin-based (PAR, MR, BR, R) Standards (A-Style) and Decorative (globe, candelabra, etc.) Lamps                                                                                                                                                                                                                                     |                        | \$20 per lamp                                                                                                                                                               |                                |
| LED Refrigerated/Freezer Case Lighting: Incentive for replacement of fluorescent lighting systems in medium or low temperature display cases                                                                                                                                                                                                        |                        | \$30 per 4' fixture<br>\$42 per 5' fixture<br>\$65 per 6' fixture                                                                                                           |                                |
| LED Retrofit Kits                                                                                                                                                                                                                                                                                                                                   |                        | To be evaluated through the custom measures path                                                                                                                            |                                |
| Pulse-Start Metal Halide                                                                                                                                                                                                                                                                                                                            |                        |                                                                                                                                                                             |                                |
| Pulse Start metal Halide (for fixtures ≥ 150 watts)                                                                                                                                                                                                                                                                                                 |                        | \$25 per fixture (includes parking lot lighting)                                                                                                                            |                                |
| RETROFIT INCENTIVES                                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| Compact Fluorescent                                                                                                                                                                                                                                                                                                                                 |                        |                                                                                                                                                                             |                                |
| Screw-in PAR 38 or PAR 30 (CFL) as per requirement 7.                                                                                                                                                                                                                                                                                               |                        | \$7 per lamp replaced                                                                                                                                                       |                                |
| Linear Fluorescent Lighting                                                                                                                                                                                                                                                                                                                         |                        |                                                                                                                                                                             |                                |
| High-Efficiency Fluorescent Fixtures:<br>For retrofit of T-12 fixtures to T-5 or T-8 with electric ballasts                                                                                                                                                                                                                                         |                        | \$10 per fixture (1-4 lamps retrofits)                                                                                                                                      |                                |
| For retrofit of T-8 fixtures by permanent delamping & new reflectors.<br>Electronic ballast replacement required for all eligible delamped fixtures.                                                                                                                                                                                                |                        | \$15 per fixture                                                                                                                                                            |                                |
| T-12 to T-8 fixtures by permanent delamping & new reflectors.<br>Electronic ballast replacement required for all eligible delamped fixtures.                                                                                                                                                                                                        |                        | \$20 per fixture                                                                                                                                                            |                                |
| Retrofit of existing 32 watt T-8 system to reduced wattage (28w/25w 4')                                                                                                                                                                                                                                                                             |                        | \$10 per fixture (1-4 lamps)                                                                                                                                                |                                |
| Induction Lighting                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                             |                                |
| \$50 per HID (≥100w) fixture retrofitted with induction lamp                                                                                                                                                                                                                                                                                        |                        | \$50 per HID (≥100w) fixture retrofitted with induction lamp, power coupler and generator. Replacement unit must use 30% less wattage per fixture than existing HID system. |                                |
| New Construction & Complete Renovation - Performance based only                                                                                                                                                                                                                                                                                     |                        |                                                                                                                                                                             |                                |

## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



## 2012 Lighting Controls Application

### Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

### Payee Information (must submit W-9 form with application)

|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  |  |  |  |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |

### Contractor/Vendor Information (if different from Payee)

|                |  |  |  |  |  |              |  |                                                                           |     |                        |                  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|-----|------------------------|------------------|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |     | E-mail Address         |                  |
| Street Address |  |  |  |  |  | City         |  | State                                                                     | Zip | Telephone No.<br>(   ) | Fax No.<br>(   ) |

### Building Type (circle one)

Education-Primary School; Education-Community College; Education-University; Grocery; Medical-Hospital; Medical-Clinic; Lodging Hotel(Guest Rooms); Lodging Motel; Manufacturing-Light Industrial; Office-Large; Office-Small; Restaurant-Sit Down; Restaurant-Fast Food; Retail-3 Story Large; Retail- Single Story Large; Retail-Small; Storage Conditioned; Storage Unconditioned; Warehouse; Other

### Lighting Control Incentive

**\$\_\_\_\_\_ Total Incentive (per attached worksheet calculations)**

**Note: Lighting Controls Incentive Worksheet must accompany this application.**





## Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements, including special requirements for lighting controls.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. All lighting controls must be listed by UL or other OSHA approved Nationally Recognized Testing Laboratory (NRTL) in accordance with applicable US standards.
4. If more than one eligible lighting control device is associated with the same eligible fixture, the incentive paid will be for the lighting control device that yields the largest incentive only.
5. Occupancy Sensor Controls (existing facilities only):
  - There is no incentive available for occupancy sensors installed in a space where they are prohibited by state or local building or safety code. Additionally, no incentive is eligible for occupancy sensors in the following specific spaces in all cases: stairways, restrooms (remote mounted only allowed), elevators, corridors/hallways, lobbies, and closets/storage areas.
  - Incentives will only be paid for eligible occupancy sensors (OSW & OSR) controlling at least 2 eligible lighting fixtures and, for OSR installations, a minimum total connected load of 180 watts.
  - Incentives will only be paid for eligible OSRH occupancy sensors controlling eligible fixtures when the controlled wattage is greater than 180 watts.
  - Occupancy sensors with manual override to the "ON" position are ineligible for incentive.
6. High-Low Controls (OHLF and OHLH):
  - Incentives will not be paid for high-low controls on eligible fluorescent fixtures where daylight dimming controls can be effectively employed.
  - Incentives will not be paid for spaces where the bottom of the fixture does not comply with the appropriate Prescriptive Lighting 2012 incentives, nor in spaces smaller than 250 square feet.
  - Incentives available only when "low level" is no more than 60% of "high level."
  - Incentives are not available for the following spaces: stairways, elevators, corridors/hallways, or lobbies.
  - OHLF will control fixtures that have a ballast factor less than 1.0 for T-5s, induction lighting and 1.14 for T-8s.
  - OHLH will control fixtures that have a ballast factor greater than or equal to 1.0 for T-5s, induction lighting and 1.14 for T-8s.
7. Daylight Dimming Controls for eligible fixtures:
  - Incentives will only be paid for eligible daylight dimming controls operating at least 4 eligible ballasts with a minimum total connected load of 240 watts.
  - Dimming shall be continuous or stepped at 4 or more levels.
  - Incentives will be paid only for eligible daylight dimming control systems designed in accordance with IESNA practice as delineated in "RP-5-99, IESNA Recommended Practice of Daylighting."
  - DLD will control fixtures that have a ballast factor less than 1.0 for T-5s and 1.14 for T-8s.
  - DDH will control fixtures that have a ballast factor greater than or equal to 1.0 for T-5s and 1.14 for T-8s.

## Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
  - ☐ Manufacturer's specification sheets for proposed technology are included
  - ☐ A copy (all pages) of a recent month's utility bill is included
  - ☐ Check this box if you are applying for an ARRA Block Grant.

- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

## Lighting Control Prescriptive Incentives\*

| Control Device Type                                              | Incentive per Unit          |
|------------------------------------------------------------------|-----------------------------|
| OSW – Occupancy Sensor Wall Mounted (Existing facilities only)   | \$20 per control            |
| OSR – Occupancy Sensor Remote Mounted (Existing facilities only) | \$35 per control            |
| DLD – Fluorescent Daylight Dimming                               | \$25 per fixture controlled |
| DLD – Fluorescent Daylight Dimming (Office Applications)         | \$50 per fixture controlled |
| OHLF – Occupancy Controlled High-Low with Step Ballast           | \$25 per fixture controlled |
| OSRH – Occupancy Sensor Remote Mounted                           | \$35 per control            |
| OHLH – Occupancy Controlled High-Low with Step Ballast           | \$75 per fixture controlled |
| DDH – Daylight Dimming                                           | \$75 per fixture controlled |

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com](http://NJCleanEnergy.com)**





## Program Terms and Conditions

### Definitions:

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**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



# 2012 Performance Lighting Application

## Customer Information

|                                                                                                                                                                |  |                                    |  |                                                                                        |  |                               |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|--|
| Company                                                                                                                                                        |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |  |
| Facility Address                                                                                                                                               |  |                                    |  | City                                                                                   |  | State Zip                     |  |
| Type of Project<br><input type="checkbox"/> New Construction (Renovation and Equipment Replacement are no longer eligible for Performance Lighting Incentives) |  |                                    |  |                                                                                        |  | Size of Building              |  |
| Company Mailing Address                                                                                                                                        |  |                                    |  | City                                                                                   |  | State Zip                     |  |
| Contact Person (Name/Title)                                                                                                                                    |  |                                    |  | Telephone No.<br>( )                                                                   |  | Fax No.<br>( )                |  |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                                         |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |  |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                                   |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |  |

## Payee Information (must submit W-9 form with application)

|                |  |  |  |  |  |              |  |                                                                           |  |                      |  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|--|----------------------|--|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |  | E-mail Address       |  |
| Street Address |  |  |  |  |  | City         |  | State Zip                                                                 |  | Federal Tax ID#      |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Telephone No.<br>( ) |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Fax No.<br>( )       |  |

## Contractor/Vendor Information (if different from Payee)

|                |  |  |  |  |  |              |  |                                                                           |  |                      |  |
|----------------|--|--|--|--|--|--------------|--|---------------------------------------------------------------------------|--|----------------------|--|
| Company        |  |  |  |  |  | Contact Name |  | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |  | E-mail Address       |  |
| Street Address |  |  |  |  |  | City         |  | State Zip                                                                 |  | Federal Tax ID#      |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Telephone No.<br>( ) |  |
|                |  |  |  |  |  |              |  |                                                                           |  | Fax No.<br>( )       |  |

## Building Type (circle one)

Education-Primary School; Education-Community College; Education-University; Grocery; Medical-Hospital; Medical-Clinic; Lodging Hotel(Guest Rooms); Lodging Motel; Manufacturing-Light Industrial; Office-Large; Office-Small; Restaurant-Sit Down; Restaurant-Fast Food; Retail-3 Story Large; Retail- Single Story Large; Retail-Small; Storage Conditioned; Storage Unconditioned; Warehouse; Other

## Performance Lighting Incentive

**\$ \_\_\_\_\_ Total Incentive (per attached worksheet calculations)**

- 1. Attach Performance Lighting Incentive Worksheet.**
- 2. Data must be provided to indicate that installed lighting exceeds ASHRAE performance standard by the program incentive threshold (refer to table on next page).**

### Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements, including special requirements for compact fluorescent fixtures.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Incentives for T-5 and T-8 fluorescent lighting fixtures with electronic ballasts are available only for fixtures with a Total Harmonic Distortion of  $\leq 20\%$ .
4. All eligible lighting devices must be UL or other OSHA approved Nationally Recognized Testing Laboratory (NRTL) in accordance with applicable US standards.
5. Incentives are available for new construction only.

### Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

#### CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

### Performance Lighting Incentives\*

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indoor Lighting<br>Outdoor Lighting (attached to building only)                     | \$1.00 per watt per square foot below program incentive threshold                                                                                                                                                                                                                                                                                                                                                     |
| Maximum Incentive                                                                   | \$30 per qualified fixture                                                                                                                                                                                                                                                                                                                                                                                            |
| Baseline                                                                            | New Jersey Code (ASHRAE 90.1-2007)                                                                                                                                                                                                                                                                                                                                                                                    |
| Incentive Threshold<br>New Construction                                             | 5% more energy-efficient than ASHRAE 90.1-2007                                                                                                                                                                                                                                                                                                                                                                        |
| Minimum Lighting Levels- Applicant shall be responsible for confirming light levels | Lighting installed under the performance incentive path should comply with the following minimum lighting levels: <ul style="list-style-type: none"><li>■ Lighting level requirements as specified by New Jersey's non-residential construction code, or</li><li>■ For publicly supported schools, minimum lighting levels as specified in the New Jersey Administrative Code Title 6-NJAC 6:22-5.4, g1-h1.</li></ul> |

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com](http://NJCleanEnergy.com)**

New Jersey SmartStart Buildings® is a registered trademark. Use of the mark without the permission of the New Jersey Board of Public Utilities, Office of Clean Energy is prohibited.

\*Incentives/Requirements subject to change.



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.





# 2012 Performance Lighting Incentive Worksheet

## Customer Information

|                                                                                                          |                  |
|----------------------------------------------------------------------------------------------------------|------------------|
| Company                                                                                                  | Facility Address |
| <input type="checkbox"/> Check here if multiple worksheets are being submitted for one project/building. | Date Submitted   |

## Code and Program Limit

| A          | B                           | C                                             | D                                                         | E                                | F                                |
|------------|-----------------------------|-----------------------------------------------|-----------------------------------------------------------|----------------------------------|----------------------------------|
| Space Type | Gross Lighted Area (sq.ft.) | Unit Lighting Power Allowance (Watts/sq. ft.) | New Construction Program Limit (Watts/sq. ft.) [C x 0.95] | Lighting Power Limit (W) [B x D] | Composite Program Limit [ΣE/ ΣB] |
|            |                             |                                               |                                                           |                                  |                                  |
|            |                             |                                               |                                                           |                                  |                                  |
|            |                             |                                               |                                                           |                                  |                                  |
|            |                             |                                               |                                                           |                                  |                                  |
|            |                             |                                               |                                                           |                                  |                                  |
|            | Σ                           |                                               |                                                           | Σ                                |                                  |

## Installed Lighting Levels

| G        | H             | I                     | J                    | K                   | L                         |
|----------|---------------|-----------------------|----------------------|---------------------|---------------------------|
| Space ID | Luminaire Tag | Luminaire Description | Number of Luminaires | Watts per Luminaire | Connected Watts [ J x K ] |
|          |               |                       |                      |                     |                           |
|          |               |                       |                      |                     |                           |
|          |               |                       |                      |                     |                           |
|          |               |                       |                      |                     |                           |
|          |               |                       |                      |                     |                           |
|          |               |                       | Σ                    |                     | Σ                         |

M. Composite Connected Watts/Square Foot [ΣL/ΣB]

## Incentive Calculation

N. Incentive Margin [F-M] (If less than zero, enter 0; no incentive)

O. Lighting Level Incentive [ΣB x N x \$1]

P. Fixture Maximum Incentive [ΣJ x \$30]

Q. Program Incentive [Enter lesser of O or P]

\* To ensure correct incentive calculations, do not include any spaces that exceed the program limit (watts/sq. ft.) in Column D.

## Performance Lighting Incentive Worksheet — Instructions

This worksheet is intended for use in assessing incentives that may be available for meeting Performance Lighting criteria of the New Jersey SmartStart Buildings® Program. It is modeled after the lighting worksheets/forms in the ASHRAE 90.1-2007 User's Manual and is intended to be used in conjunction with ASHRAE Standard 90.1-2007 for Lighting Power Densities by building area (Table 9.5.1 - page 62) and space type (Table 9.6.1 - pages 63-64).

1. Applicants must select building types from Table 9.5.1 and space types from Table 9.6.1.
2. Each space type must be listed separately on the worksheet with a corresponding 'Space ID' (see Column G) of sufficient detail for an auditor to find the associated luminaires (see Column H).
3. For each space type with multiple luminaire types (i.e. 2x4 3L and 2x2 2U), list each luminaire type on a separate line. List the 'space type,' 'gross lighted area' and 'space ID' only once and on the first line describing that 'space type.'
4. Interior lighting and exterior lighting must appear on separate worksheets.
5. Incentives are available for new construction only.

## Specific Instructions

1. At the top of the page in the space provided, enter the 'building type' (as listed ASHRAE 90.1-2007 Table 9.5.1). Enter in Column A the 'space type' (as listed in ASHRAE 90.1-2007 Table 9.6.1).
2. Enter the floor area of the space in Column B.
3. Select the Unit Lighting Power Allowance (ULPA) from ASHRAE Standard 90.1-2007 for the appropriate space/building using any of the Tables: 9.5.1 (for interior lighting), or 9.4.5 (for exterior lighting) in the standard. Enter this in Column C.
4. Calculate D for New Construction.
5. Calculate E and F.
6. In the lower table in the worksheet, enter installed lighting equipment by type in Columns H and I, indicating spaces where installed in Column G. Enter all lighting fixtures/luminaires in the building/space, including new and retrofit fixtures, and pre-existing fixtures that remain in use.
7. Enter the number of each type of luminaire in Column J and the watts per luminaire unit in Column K.
8. Calculate Column L.
9. Calculate M and N. If N is zero or less, no incentive is available for this building/space.
10. Calculate O and P.
11. Enter the estimated incentive (lesser amount of O or P) in Line Q.

## Performance Lighting Incentives\*

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indoor Lighting<br>Outdoor Lighting (attached to building only)                      | \$1.00 per watt per square foot below program incentive threshold                                                                                                                                                                                                                                                                                                                                                               |
| Maximum Incentive                                                                    | \$30 per qualified fixture                                                                                                                                                                                                                                                                                                                                                                                                      |
| Baseline                                                                             | New Jersey Code (ASHRAE 90.1-2007)                                                                                                                                                                                                                                                                                                                                                                                              |
| Incentive Threshold<br>New Construction                                              | 5% more energy-efficient than ASHRAE 90.1-2007                                                                                                                                                                                                                                                                                                                                                                                  |
| Minimum Lighting Levels – Applicant shall be responsible for confirming light levels | <p>Lighting installed under the performance incentive path should comply with the following minimum lighting levels:</p> <ul style="list-style-type: none"> <li>■ Lighting level requirements as specified by New Jersey's non-residential construction code, or</li> <li>■ For publicly supported schools, minimum lighting levels as specified in the New Jersey Administrative Code Title 6-NJAC 6:22-5.4, g1-h1.</li> </ul> |

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**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.



## 2012 Refrigeration Doors/Covers Application

### Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

### Payee Information (must submit W-9 form with application)

|                |  |              |       |                                                                           |                        |                  |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address   |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

### Contractor/Vendor Information (if different from Payee)

|                |  |              |       |                                                                           |                        |                  |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address   |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

### Building Type (circle one)

Education-Primary School; Education-Community College; Education-University; Grocery; Medical-Hospital; Medical-Clinic; Lodging Hotel(Guest Rooms); Lodging Motel; Manufacturing-Light Industrial; Office-Large; Office-Small; Restaurant-Sit Down; Restaurant-Fast Food; Retail-3 Story Large; Retail- Single Story Large; Retail-Small; Storage Conditioned; Storage Unconditioned; Warehouse; Other

### Refrigeration Doors/Covers Information

| Reason Type | Type                                                  | Manufacturer | Location                     | Refrigeration Case Temperature                                                                         | Hours Store Closed Per Day-For Covers Only | # of Energy-Efficient Doors (A <sup>1</sup> ) | Width of Protected Opening In Linear Feet (A <sup>2</sup> ) | Incentive (Table) (B) | Total Incentives (A <sup>1</sup> or A <sup>2</sup> x B) |
|-------------|-------------------------------------------------------|--------------|------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------------------------|-----------------------|---------------------------------------------------------|
| N-New       | C- Aluminum Night Covers<br>D- Energy-Efficient Doors |              |                              | Low Temperature (-35°F to -5°F)<br>Medium Temperature (0°F to 30°F)<br>High Temperature (35°F to 55°F) |                                            |                                               |                                                             |                       |                                                         |
| (example) N | C                                                     | Acme         | Non-Dairy Refrigerated Foods | High                                                                                                   | 6                                          | N/A                                           | 40 feet                                                     | \$3.50                | 40 x \$3.50 = \$140                                     |
| N           | D                                                     | Acme         | Open Dairy Cases             | High                                                                                                   | N/A                                        | 10                                            | 30 feet                                                     | \$100                 | 10 x \$100 = \$1,000                                    |
|             |                                                       |              |                              |                                                                                                        |                                            |                                               |                                                             |                       |                                                         |
|             |                                                       |              |                              |                                                                                                        |                                            |                                               |                                                             |                       |                                                         |
|             |                                                       |              |                              |                                                                                                        |                                            |                                               |                                                             |                       |                                                         |

### Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Replacement of existing doors/covers not eligible for incentive.
4. Incentives for existing open refrigerated cases only.
5. Doors must have either heat reflective treated glass, be gas filled, or both.
6. Aluminum night curtains incentive applicable for existing refrigerated cases, used for non-frozen products which do not have doors or other means of full or partial closure to reduce cold air loss to ambient room air.

### Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <hr/> <b>CUSTOMER'S SIGNATURE</b> | <small>By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).</small> |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Refrigeration Covers/Doors Incentives

| Type                                                      | Incentive              |
|-----------------------------------------------------------|------------------------|
| Energy-Efficient Doors/Covers for Open Refrigerated Cases | \$100 per door         |
| Aluminum Night Curtains for Open Refrigerated Cases       | \$3.50 per linear foot |

**Mail or fax your application package DIRECTLY to the Commercial/Industrial Program Manager.**

New Jersey's Clean Energy Program  
c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095  
Phone: 866-657-6278 • Fax: 732-855-0422

**Visit our website: [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb)**



## Program Terms and Conditions

### Definitions:

**Design Incentives** – Incentives that may be offered to design professionals by the Program.

**Design Services** – Services that may be offered to design professionals under the Program.

**Energy-Efficient Measures** – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

**New Jersey Utilities** – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

**Administrator** – New Jersey Board of Public Utilities, Office of Clean Energy

**Participating Customers** – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

**Program Incentives** – Refers to the amount or level of incentive that the Program provides to Participating Customers pursuant to the Program offered herein (see description under “Incentive Amount” heading).

**Program Offer** – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Program Manager if you are uncertain about project eligibility.

**Program Manager** – TRC Energy Services.

**Application and Eligibility Process** – The Program pays incentives after the installation of qualified energy-efficient measures that were pre-approved (for exceptions to this condition, please refer to “Exceptions for Approval”). In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer’s cut sheets (where appropriate). This information must be submitted to the Program Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Program Manager on or before December 31, 2012 in order to be eligible for 2012 incentives. The Program Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Program Manager’s approval letter is not eligible for an incentive. The Program Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

**Exceptions for Approval** – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than \$5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Program Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Program Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

The Program Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.

*Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not eligible for incentives offered through this program.*

**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.





# 2012 Refrigeration Controls Application

## Customer Information

|                                                                                                                                                 |  |                                    |  |                                                                                        |  |                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|--|----------------------------------------------------------------------------------------|--|-------------------------------|-----|
| Company                                                                                                                                         |  | Electric Utility Serving Applicant |  | Electric Account No.                                                                   |  | Anticipated Installation Date |     |
| Facility Address                                                                                                                                |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Type of Project<br><input type="checkbox"/> New Construction <input type="checkbox"/> Renovation <input type="checkbox"/> Equipment Replacement |  |                                    |  |                                                                                        |  | Size of Building              |     |
| Company Mailing Address                                                                                                                         |  |                                    |  | City                                                                                   |  | State                         | Zip |
| Contact Person (Name/Title)                                                                                                                     |  |                                    |  | Telephone No.<br>(   )                                                                 |  | Fax No.<br>(   )              |     |
| Incorporated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exempt                                          |  |                                    |  | Federal Tax ID# or SSN                                                                 |  | E-mail Address                |     |
| Incentive Payment to<br><input type="checkbox"/> Customer <input type="checkbox"/> Contractor <input type="checkbox"/> Other                    |  |                                    |  | Please assign payment to contractor/vendor/other indicated below<br>Customer Signature |  |                               |     |

## Payee Information (must submit W-9 form with application)

|                |  |              |       |                                                                           |                        |                  |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address   |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

## Contractor/Vendor Information (if different from Payee)

|                |  |              |       |                                                                           |                        |                  |  |
|----------------|--|--------------|-------|---------------------------------------------------------------------------|------------------------|------------------|--|
| Company        |  | Contact Name |       | Incorporated?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |                        | E-mail Address   |  |
| Street Address |  | City         | State | Zip                                                                       | Telephone No.<br>(   ) | Fax No.<br>(   ) |  |

## Building Type (circle one)

Education-Primary School; Education-Community College; Education-University; Grocery; Medical-Hospital; Medical-Clinic; Lodging Hotel(Guest Rooms); Lodging Motel; Manufacturing-Light Industrial; Office-Large; Office-Small; Restaurant-Sit Down; Restaurant-Fast Food; Retail-3 Story Large; Retail- Single Story Large; Retail-Small; Storage Conditioned; Storage Unconditioned; Warehouse; Other

## Refrigeration Controls Information

| Reason Type | Type                                                                                                                 | Manufacturer | Location         | Refrigeration Case Temperature                                                                                  | Equipment Info                                                                                                                                                   | # of Units (A) | Incentive (Table) (B) | Total Incentives (AxB) |
|-------------|----------------------------------------------------------------------------------------------------------------------|--------------|------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------|------------------------|
| N-New       | D - Door Heater Control<br>E - Electric Defrost Control<br>EF - Evaporator Fan Control<br>N - Novelty Cooler Shutoff |              |                  | Low Temperature<br>(-35°F to -5°F)<br>Medium Temperature<br>(0°F to 30°F)<br>High Temperature<br>(35°F to 55°F) | Door Heater / Electric Defrost - Enter nameplate kW<br>Evaporator Fan - Enter fan and compressor (Amps/Volts/Phase)<br>Novelty Cooler - Enter (Amps/Volts/Phase) |                |                       |                        |
| (Example) N | D                                                                                                                    | Acme         | Dairy Cooler     | Low                                                                                                             | 0.5 kW                                                                                                                                                           | 4              | \$50                  | 4 x \$50 = \$200       |
| N           | N                                                                                                                    | Acme         | Open Dairy Cases | Medium                                                                                                          | 0.9A / 230V / 3-phase                                                                                                                                            | 5              | \$50                  | 5 x \$50 = \$250       |
|             |                                                                                                                      |              |                  |                                                                                                                 |                                                                                                                                                                  |                |                       |                        |
|             |                                                                                                                      |              |                  |                                                                                                                 |                                                                                                                                                                  |                |                       |                        |
|             |                                                                                                                      |              |                  |                                                                                                                 |                                                                                                                                                                  |                |                       |                        |

### Specific Program Requirements\* (these requirements are in addition to the Program Terms and Conditions.)

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Program Manager.
3. Replacement of existing refrigeration controls not eligible for incentive.
4. All eligible refrigeration control devices must be listed by UL or other OSHA approved Nationally Recognized Testing Laboratory (NRTL) in accordance with applicable US standards.

### Application Checklist (before submitting your application, please make sure you have signed in the space below and completed the following items.)

- ☐ Payee Information is filled out and a W-9 form of the payee is included
- ☐ Manufacturer's specification sheets for proposed technology are included
- ☐ A copy (all pages) of a recent month's utility bill is included
- ☐ Check this box if you are applying for an ARRA Block Grant.
- ☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

### ACKNOWLEDGEMENT

CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form. I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

### Refrigeration Controls Incentives

| Type                     | Incentive        |
|--------------------------|------------------|
| Door Heater Control      | \$50 per control |
| Electric Defrost Control | \$50 per control |
| Evaporator Fan Control   | \$75 per control |
| Novelty Cooler Shutoff   | \$50 per control |

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## Program Terms and Conditions

### Definitions:

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**Product Installation or Equipment Installation** – Installation of the Energy-Efficient Measures.

**Program** – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

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**Post-Installation Approval** – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Program Manager’s initial approval letter.

Please refer to the program guide on the [NJCleanEnergy.com/ssb](http://NJCleanEnergy.com/ssb) website for the complete Application and Eligibility Process.

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**Incentive Amount** – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Program Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to \$500,000 per utility account in a calendar year. Contact the Program Manager regarding any questions.

**Tax Liability** – The Program Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number to the Program Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (entitled "Business Assistance or Incentive Clearance Certificate") that is dated within 90 days of equipment installation.

**Endorsement** – The Program Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

**Warranties** – THE PROGRAM MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

**Limitation of Liability** – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Program Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Program Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Program Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Program Manager under this Program shall be individual, and not joint and/or several.

**Assignment** – The Participating Customer may assign Program Incentive payments to a specified vendor.

**Participating Customer's Certification** – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

**Termination** – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

**Acknowledgement** – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Program Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.

The graphic consists of a large light blue rectangle on the left side of the page. A horizontal line extends from the right edge of this rectangle across the page. A vertical line extends from the bottom of the light blue rectangle down to the bottom of the page. The intersection of these two lines is where the text 'Appendix G' is located. The text is in a bold, dark blue font. The area to the right of the vertical line and below the horizontal line is a solid dark blue rectangle.

## Appendix G



# SmartStart



## 2012 Local Government Energy Audit Program Facility Data Form

Complete one Facility Data Form for each building that you would like to have audited.

**Applying Entity:** Wall Township Board of Education

☒ This Entity owns the facility described below or has provided documentation to show that the applicant pays the utility bills and has permission from the building owner to perform audit and install energy-efficient equipment.

**Utility Serving Applicant (check all that apply):**

- ☐ Atlantic City Electric    ☒ Jersey Central Power & Light    ☒ New Jersey Natural Gas  
☐ Elizabethtown Gas    ☐ South Jersey Gas    ☐ Public Service Electric & Gas  
☐ Rockland Electric Company  
☐ Non-regulated energy company (oil, propane, municipal, cooperative, etc.<sup>(1)</sup>): \_\_\_\_\_

<sup>(1)</sup> Note: buildings that are NOT served by at least one regulated utility will be eligible to receive incentives on a limited basis, depending on federal funding availability. Applicant must check off the appropriate box above for buildings in this situation.

### Facility Information (please complete the info below for this specific facility that is seeking enrollment in the Program.)

|                                                     |  |                                  |                                   |
|-----------------------------------------------------|--|----------------------------------|-----------------------------------|
| Facility Name<br><u>Allenwood Elementary School</u> |  |                                  |                                   |
| Address<br><u>3301 Allenwood-Lakewood Rd</u>        |  | City<br><u>Allenwood</u>         | State<br><u>NJ</u>                |
| Zip<br><u>08720</u>                                 |  | County<br><u>Morristown</u>      |                                   |
| Facility's Description<br><u>School</u>             |  | Total Sq. Ft.<br><u>49,920</u>   |                                   |
| Year Built<br><u>1953</u>                           |  | Hours/Week Occupied<br><u>70</u> | Number of Employees<br><u>500</u> |

### Building Type (check one of the following):

- |                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Emergency Services             | <input type="checkbox"/> Garage                        |
| <input type="checkbox"/> Center/Meeting Hall/Library    | <input type="checkbox"/> Offices                       |
| <input type="checkbox"/> Recreation/Entertainment/Parks | <input type="checkbox"/> Religious                     |
| <input checked="" type="checkbox"/> School              | <input type="checkbox"/> School: College or University |
| <input type="checkbox"/> Water Treatment/Pumping        | <input type="checkbox"/> Other: _____                  |



## Energy Data

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The data below is for the 12 month period: 9 / 1 / 10 to 9 / 1 / 11

Buildings with maximum demand of under 150 kW will not be eligible for the LGEA Program, unless applicant demonstrates need for envelope measures to be evaluated. Direct Install should be considered for the buildings instead of the LGEA Program.

## Electricity

Electricity Utility Name & Account Number(s)

JCP&L 10 60 12 9680 28

|                |                         |                              |                              |
|----------------|-------------------------|------------------------------|------------------------------|
| Annual kWh Use | Annual Electricity Cost | Max Summer kW <sup>(2)</sup> | Max Winter kW <sup>(2)</sup> |
| 407,570        | \$61,706                | 139                          | 104                          |

<sup>(2)</sup> These numbers are DEMAND. If the max demand is less than 150 kW, please provide additional documentation to demonstrate that the building needs envelope measures considered. Alternatively, the building may be submitted to the Direct Install Program.

## Natural Gas

Natural Gas Utility Name & Account Number(s)

NJ Natural Gas

|                      |                         |
|----------------------|-------------------------|
| Annual Use in Therms | Annual Natural Gas Cost |
|                      |                         |

## Fuel Oil

Fuel Oil Utility Name & Account Number(s)

|                       |                      |
|-----------------------|----------------------|
| Annual Use in Gallons | Annual Fuel Oil Cost |
|                       |                      |

## Propane

Propane Utility Name & Account Number(s)

|                       |                     |
|-----------------------|---------------------|
| Annual Use in Gallons | Annual Propane Cost |
|                       |                     |

## Other

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

|                                    |                    |
|------------------------------------|--------------------|
| Annual Energy Use (indicate units) | Annual Energy Cost |
|                                    |                    |

Please mail, fax, or e-mail your completed application to:  
New Jersey's Clean Energy Program c/o TRC Energy Services  
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095

Phone: 866-657-6278 • Fax: 732-855-0422 • E-mail: LGEA@trcsolutions.com

For further questions, please call 866-657-6278 x4 or visit our website at NJCleanEnergy.com/LGEA

Staff Use Only: Date Received: \_\_\_\_\_

Project No. \_\_\_\_\_



# SmartStart



## 2012 Local Government Energy Audit Program Facility Data Form

Complete one Facility Data Form for each building that you would like to have audited.

**Applying Entity:** Wall Township Board of Education

- ☒ This Entity owns the facility described below or has provided documentation to show that the applicant pays the utility bills and has permission from the building owner to perform audit and install energy-efficient equipment.

**Utility Serving Applicant (check all that apply):**

- ☐ Atlantic City Electric    ☒ Jersey Central Power & Light    ☒ New Jersey Natural Gas  
☐ Elizabethtown Gas    ☐ South Jersey Gas    ☐ Public Service Electric & Gas  
☐ Rockland Electric Company  
☐ Non-regulated energy company (oil, propane, municipal, cooperative, etc.<sup>(1)</sup>): \_\_\_\_\_

<sup>(1)</sup> Note: buildings that are NOT served by at least one regulated utility will be eligible to receive incentives on a limited basis, depending on federal funding availability. Applicant must check off the appropriate box above for buildings in this situation.

### Facility Information (please complete the info below for this specific facility that is seeking enrollment in the Program.)

|                                                   |                           |                                         |                                   |                     |
|---------------------------------------------------|---------------------------|-----------------------------------------|-----------------------------------|---------------------|
| Facility Name<br><u>Central Elementary School</u> |                           |                                         |                                   |                     |
| Address<br><u>2007 Allenwood Road</u>             |                           | City<br><u>Wall</u>                     | State<br><u>NJ</u>                | Zip<br><u>07719</u> |
| County<br><u>Monmouth</u>                         |                           | Facility's Description<br><u>School</u> |                                   |                     |
| Total Sq. Ft<br><u>56,110</u>                     | Year Built<br><u>1950</u> | Hours/Week Occupied<br><u>70</u>        | Number of Employees<br><u>700</u> |                     |

### Building Type (check one of the following):

- |                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Emergency Services             | <input type="checkbox"/> Garage                        |
| <input type="checkbox"/> Center/Meeting Hall/Library    | <input type="checkbox"/> Offices                       |
| <input type="checkbox"/> Recreation/Entertainment/Parks | <input type="checkbox"/> Religious                     |
| <input checked="" type="checkbox"/> School              | <input type="checkbox"/> School: College or University |
| <input type="checkbox"/> Water Treatment/Pumping        | <input type="checkbox"/> Other: _____                  |



## Energy Data

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The data below is for the 12 month period: 9/1 / 10 to 9/1 / 11

Buildings with maximum demand of under 150 kW will not be eligible for the LGEA Program, unless applicant demonstrates need for envelope measures to be evaluated. Direct Install should be considered for the buildings instead of the LGEA Program.

## Electricity

Electricity Utility Name & Account Number(s)

Scpl L - 10 00 13 6576 29

Annual kWh Use

491,520

Annual Electricity Cost

\$74,390

Max Summer kW <sup>(2)</sup>

179

Max Winter kW <sup>(2)</sup>

137

<sup>(2)</sup> These numbers are DEMAND. If the max demand is less than 150 kW, please provide additional documentation to demonstrate that the building needs envelope measures considered. Alternatively, the building may be submitted to the Direct Install Program.

## Natural Gas

Natural Gas Utility Name & Account Number(s)

NJ Natural Gas

Annual Use in Therms

Annual Natural Gas Cost

## Fuel Oil

Fuel Oil Utility Name & Account Number(s)

Annual Use in Gallons

Annual Fuel Oil Cost

## Propane

Propane Utility Name & Account Number(s)

Annual Use in Gallons

Annual Propane Cost

## Other

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

Annual Energy Use (indicate units)

Annual Energy Cost

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Staff Use Only: Date Received: \_\_\_\_\_

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# SmartStart



## 2012 Local Government Energy Audit Program Facility Data Form

Complete one Facility Data Form for each building that you would like to have audited.

**Applying Entity:** Wall Township Board of Education

- ☐ This Entity owns the facility described below or has provided documentation to show that the applicant pays the utility bills and has permission from the building owner to perform audit and install energy-efficient equipment.

**Utility Serving Applicant (check all that apply):**

- ☐ Atlantic City Electric    ☒ Jersey Central Power & Light    ☒ New Jersey Natural Gas  
☐ Elizabethtown Gas    ☐ South Jersey Gas    ☐ Public Service Electric & Gas  
☐ Rockland Electric Company  
☐ Non-regulated energy company (oil, propane, municipal, cooperative, etc.<sup>(1)</sup>): \_\_\_\_\_

<sup>(1)</sup> Note: buildings that are NOT served by at least one regulated utility will be eligible to receive incentives on a limited basis, depending on federal funding availability. Applicant must check off the appropriate box above for buildings in this situation.

### Facility Information (please complete the info below for this specific facility that is seeking enrollment in the Program.)

|                                                    |  |                                  |                                   |
|----------------------------------------------------|--|----------------------------------|-----------------------------------|
| Facility Name<br><u>Old Mill Elementary School</u> |  |                                  |                                   |
| Address<br><u>2119 Old Mill Rd</u>                 |  | City<br><u>Sea Girt</u>          | State<br><u>NJ</u>                |
| Zip<br><u>08750</u>                                |  | County<br><u>Monmouth</u>        |                                   |
| Facility's Description<br><u>School</u>            |  | Total Sq. Ft.<br><u>56,440</u>   |                                   |
| Year Built<br><u>1960</u>                          |  | Hours/Week Occupied<br><u>70</u> | Number of Employees<br><u>600</u> |

### Building Type (check one of the following):

|                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Emergency Services             | <input type="checkbox"/> Garage                        |
| <input type="checkbox"/> Center/Meeting Hall/Library    | <input type="checkbox"/> Offices                       |
| <input type="checkbox"/> Recreation/Entertainment/Parks | <input type="checkbox"/> Religious                     |
| <input checked="" type="checkbox"/> School              | <input type="checkbox"/> School: College or University |
| <input type="checkbox"/> Water Treatment/Pumping        | <input type="checkbox"/> Other: _____                  |



## Energy Data

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The data below is for the 12 month period: 9 / 1 / 10 to 9 / 1 / 11

Buildings with maximum demand of under 150 kW will not be eligible for the LGEA Program, unless applicant demonstrates need for envelope measures to be evaluated. Direct Install should be considered for the buildings instead of the LGEA Program.

## Electricity

Electricity Utility Name & Account Number(s)

Scpul 10 00 12 157705

Annual kWh Use

736,320

Annual Electricity Cost

\$105,807

Max Summer kW <sup>(2)</sup>

209

Max Winter kW <sup>(2)</sup>

160

<sup>(2)</sup> These numbers are DEMAND. If the max demand is less than 150 kW, please provide additional documentation to demonstrate that the building needs envelope measures considered. Alternatively, the building may be submitted to the Direct Install Program.

## Natural Gas

Natural Gas Utility Name & Account Number(s)

NS Natural Gas

Annual Use in Therms

80,855

Annual Natural Gas Cost

89,998

## Fuel Oil

Fuel Oil Utility Name & Account Number(s)

Annual Use in Gallons

Annual Fuel Oil Cost

## Propane

Propane Utility Name & Account Number(s)

Annual Use in Gallons

Annual Propane Cost

## Other

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

Annual Energy Use (indicate units)

Annual Energy Cost

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Phone: 866-657-6278 • Fax: 732-855-0422 • E-mail: LGEA@trcsolutions.com

For further questions, please call 866-657-6278 x4 or visit our website at NJCleanEnergy.com/LGEA

Staff Use Only: Date Received: \_\_\_\_\_

Project No. \_\_\_\_\_



# SmartStart



## 2012 Local Government Energy Audit Program Facility Data Form

Complete one Facility Data Form for each building that you would like to have audited.

**Applying Entity:** Wall Township Board of Education

- ☐ This Entity owns the facility described below or has provided documentation to show that the applicant pays the utility bills and has permission from the building owner to perform audit and install energy-efficient equipment.

**Utility Serving Applicant (check all that apply):**

- ☐ Atlantic City Electric    ☒ Jersey Central Power & Light    ☒ New Jersey Natural Gas  
☐ Elizabethtown Gas    ☐ South Jersey Gas    ☐ Public Service Electric & Gas  
☐ Rockland Electric Company  
☐ Non-regulated energy company (oil, propane, municipal, cooperative, etc.<sup>(1)</sup>): \_\_\_\_\_

<sup>(1)</sup> Note: buildings that are NOT served by at least one regulated utility will be eligible to receive incentives on a limited basis, depending on federal funding availability. Applicant must check off the appropriate box above for buildings in this situation.

### Facility Information (please complete the info below for this specific facility that is seeking enrollment in the Program.)

|                                                  |                           |                                  |                                    |
|--------------------------------------------------|---------------------------|----------------------------------|------------------------------------|
| Facility Name<br><u>Wall Intermediate School</u> |                           |                                  |                                    |
| Address<br><u>2801 Allaire Road</u>              |                           | City<br><u>Wall</u>              | State<br><u>NJ</u>                 |
| Zip<br><u>07719</u>                              |                           | County<br><u>Monmouth</u>        |                                    |
| Facility's Description<br><u>School</u>          |                           |                                  |                                    |
| Total Sq. Ft<br><u>126,000</u>                   | Year Built<br><u>1970</u> | Hours/Week Occupied<br><u>90</u> | Number of Employees<br><u>1100</u> |

### Building Type (check one of the following):

- |                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Emergency Services             | <input type="checkbox"/> Garage                        |
| <input type="checkbox"/> Center/Meeting Hall/Library    | <input type="checkbox"/> Offices                       |
| <input type="checkbox"/> Recreation/Entertainment/Parks | <input type="checkbox"/> Religious                     |
| <input checked="" type="checkbox"/> School              | <input type="checkbox"/> School: College or University |
| <input type="checkbox"/> Water Treatment/Pumping        | <input type="checkbox"/> Other: _____                  |



## Energy Data

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The data below is for the 12 month period: 9 / 1 / 10 to 9 / 1 / 11

Buildings with maximum demand of under 150 kW will not be eligible for the LGEA Program, unless applicant demonstrates need for envelope measures to be evaluated. Direct Install should be considered for the buildings instead of the LGEA Program.

## Electricity

Electricity Utility Name & Account Number(s)

SCP&L 10-00-11-4715-82

| Annual kWh Use | Annual Electricity Cost | Max Summer kW <sup>(2)</sup> | Max Winter kW <sup>(2)</sup> |
|----------------|-------------------------|------------------------------|------------------------------|
| 1318848        | \$176,069               | 382                          | 482                          |

<sup>(2)</sup> These numbers are DEMAND. If the max demand is less than 150 kW, please provide additional documentation to demonstrate that the building needs envelope measures considered. Alternatively, the building may be submitted to the Direct Install Program.

## Natural Gas

Natural Gas Utility Name & Account Number(s)

NS Natural Gas

| Annual Use in Therms | Annual Natural Gas Cost |
|----------------------|-------------------------|
| 145215               | \$162,542               |

## Fuel Oil

Fuel Oil Utility Name & Account Number(s)

| Annual Use in Gallons | Annual Fuel Oil Cost |
|-----------------------|----------------------|
|                       |                      |

## Propane

Propane Utility Name & Account Number(s)

| Annual Use in Gallons | Annual Propane Cost |
|-----------------------|---------------------|
|                       |                     |

## Other

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

| Annual Energy Use (indicate units) | Annual Energy Cost |
|------------------------------------|--------------------|
|                                    |                    |

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# SmartStart



## 2012 Local Government Energy Audit Program Facility Data Form

Complete one Facility Data Form for each building that you would like to have audited.

**Applying Entity:** Wall Township Board of Education

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**Utility Serving Applicant (check all that apply):**

- ☐ Atlantic City Electric    ☒ Jersey Central Power & Light    ☒ New Jersey Natural Gas  
☐ Elizabethtown Gas    ☐ South Jersey Gas    ☐ Public Service Electric & Gas  
☐ Rockland Electric Company  
☐ Non-regulated energy company (oil, propane, municipal, cooperative, etc.<sup>(1)</sup>): \_\_\_\_\_

<sup>(1)</sup> Note: buildings that are NOT served by at least one regulated utility will be eligible to receive incentives on a limited basis, depending on federal funding availability. Applicant must check off the appropriate box above for buildings in this situation.

### Facility Information (please complete the info below for this specific facility that is seeking enrollment in the Program.)

|                                            |                           |                                  |                                    |
|--------------------------------------------|---------------------------|----------------------------------|------------------------------------|
| Facility Name<br><u>Wall High School</u>   |                           |                                  |                                    |
| Address<br><u>1630 18<sup>th</sup> Ave</u> |                           | City<br><u>Wall</u>              | State<br><u>NJ</u>                 |
| County<br><u>Monmouth</u>                  |                           | Zip<br><u>07719</u>              |                                    |
| Facility's Description<br><u>School</u>    |                           |                                  |                                    |
| Total Sq. Ft<br><u>186,340</u>             | Year Built<br><u>1959</u> | Hours/Week Occupied<br><u>70</u> | Number of Employees<br><u>1600</u> |

### Building Type (check one of the following):

- |                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Emergency Services             | <input type="checkbox"/> Garage                        |
| <input type="checkbox"/> Center/Meeting Hall/Library    | <input type="checkbox"/> Offices                       |
| <input type="checkbox"/> Recreation/Entertainment/Parks | <input type="checkbox"/> Religious                     |
| <input checked="" type="checkbox"/> School              | <input type="checkbox"/> School: College or University |
| <input type="checkbox"/> Water Treatment/Pumping        | <input type="checkbox"/> Other: _____                  |



## Energy Data

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The data below is for the 12 month period: 9 / 1 / 10 to 9 / 1 / 11

Buildings with maximum demand of under 150 kW will not be eligible for the LGEA Program, unless applicant demonstrates need for envelope measures to be evaluated. Direct Install should be considered for the buildings instead of the LGEA Program.

## Electricity

Electricity Utility Name & Account Number(s)

SCP+L - 10 00 58 8037 17

| Annual kWh Use | Annual Electricity Cost | Max Summer kW <sup>(2)</sup> | Max Winter kW <sup>(2)</sup> |
|----------------|-------------------------|------------------------------|------------------------------|
| 2,253,600      | \$328,725               | 666                          | 658                          |

<sup>(2)</sup> These numbers are DEMAND. If the max demand is less than 150 kW, please provide additional documentation to demonstrate that the building needs envelope measures considered. Alternatively, the building may be submitted to the Direct Install Program.

## Natural Gas

Natural Gas Utility Name & Account Number(s)

NS Natural Gas

| Annual Use in Therms | Annual Natural Gas Cost |
|----------------------|-------------------------|
| 125,813              | \$151,478               |

## Fuel Oil

Fuel Oil Utility Name & Account Number(s)

| Annual Use in Gallons | Annual Fuel Oil Cost |
|-----------------------|----------------------|
|                       |                      |

## Propane

Propane Utility Name & Account Number(s)

| Annual Use in Gallons | Annual Propane Cost |
|-----------------------|---------------------|
|                       |                     |

## Other

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

| Annual Energy Use (indicate units) | Annual Energy Cost |
|------------------------------------|--------------------|
|                                    |                    |

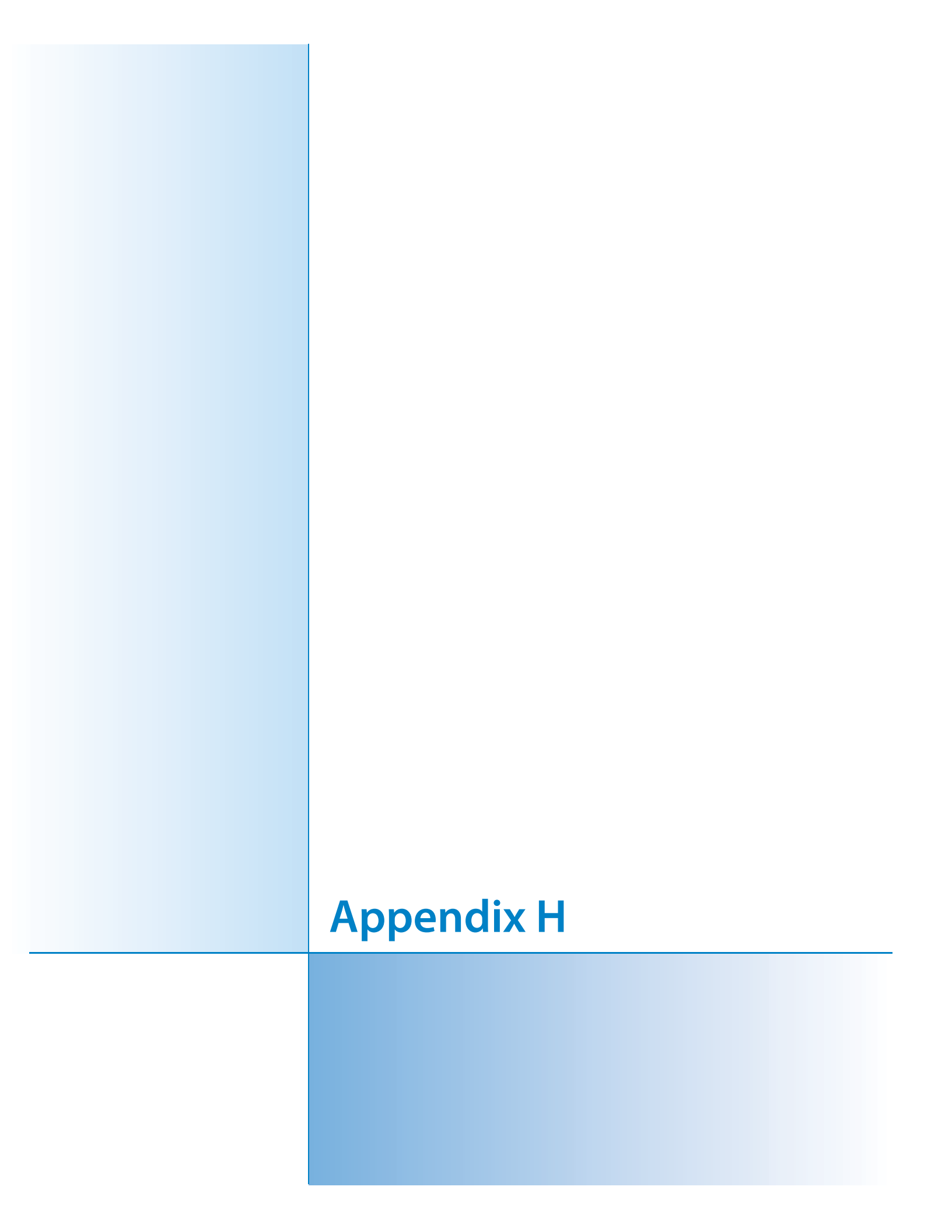
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The graphic consists of a large light blue rectangle on the left side of the page. A thin blue vertical line separates this rectangle from the rest of the page. A thin blue horizontal line crosses the vertical line, extending to the right edge of the page. The text "Appendix H" is located in the bottom right corner of the page, overlapping the horizontal line and the right side of the vertical line.

## Appendix H

# CDMSmith

11 British American Blvd  
Latham, NY 12110  
Phone (518) 782-4500  
Fax (518) 786-3810

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Education  
Estimate by: RG  
Checked by: JM

| ITEM | DESCRIPTION                                | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|--------------------------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|--------------|
| 1    | <b>Allenwood Elementary School - Total</b> |     |      |                       |                      |     |      |               |                   |              |
|      | Lighting Upgrades                          | 1   | ea.  | \$ 15,829.25          | \$ 15,829.25         | 1   | ea.  | \$ 8,621.00   | \$ 8,621.00       | \$ 24,450.25 |
|      | Subtotal                                   |     |      |                       | \$ 15,829.25         |     |      |               | \$ 8,621.00       |              |

Notes:

1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
3. Bonds not included in estimate.
4. Escalation not included in estimate.

o "This is an Opinion of Probable Construction Cost only. CDM has no control over the cost of labor, materials, equipment, or services furnished, over schedules, over contractor's methods of determining prices, competitive bidding, market conditions or negotiating terms. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids. There are not any costs provided for: Change Orders, Design Engineering, Construction Oversight, Client Costs, Finance or Funding Costs, Legal Fees, Land Acquisition or temporary/permanent Easements, Operations, or any other costs associated with this project that are not specifically part of the bidding contractor's proposed scope.

|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 24,450.25 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 3,667.54  |
| SUB-TOTAL w/ OH & P =  | \$ | 28,117.79 |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 7,029.45  |
| BUDGET COST ESTIMATE = | \$ | 35,147.23 |

| ITEM | DESCRIPTION                              | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|------------------------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|--------------|
| 1    | <b>Central Elementary School - Total</b> |     |      |                       |                      |     |      |               |                   |              |
|      | Lighting Upgrades                        | 1   | ea.  | \$ 9,931.25           | \$ 9,931.25          | 1   | ea.  | \$ 6,293.50   | \$ 6,293.50       | \$ 16,224.75 |
|      | Subtotal                                 |     |      |                       | \$ 9,931.25          |     |      |               | \$ 6,293.50       |              |

Notes:

1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
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3. Bonds not included in estimate.
4. Escalation not included in estimate.

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|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 16,224.75 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 2,433.71  |
| SUB-TOTAL w/ OH & P =  | \$ | 18,658.46 |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 4,664.62  |
| BUDGET COST ESTIMATE = | \$ | 23,323.08 |



# CDMSmith

11 British American Blvd  
Latham, NY 12110  
Phone (518) 782-4500  
Fax (518) 786-3810

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Education  
Estimate by: RG  
Checked by: JM

| ITEM | DESCRIPTION                        | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|------------------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|--------------|
| 1    | Old Mill Elementary School - Total |     |      |                       |                      |     |      |               |                   |              |
|      | Lighting Upgrades                  | 1   | ea.  | \$ 12,080.00          | \$ 12,080.00         | 1   | ea.  | \$ 8,067.00   | \$ 8,067.00       | \$ 20,147.00 |
|      | Subtotal                           |     |      |                       | \$ 12,080.00         |     |      |               | \$ 8,067.00       |              |

Notes:

1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
3. Bonds not included in estimate.
4. Escalation not included in estimate.

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|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 20,147.00 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 3,022.05  |
| SUB-TOTAL w/ OH & P =  | \$ | 23,169.05 |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 5,792.26  |
| BUDGET COST ESTIMATE = | \$ | 28,961.31 |

| ITEM | DESCRIPTION                      | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|----------------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|--------------|
| 1    | Wall Intermediate School - Total |     |      |                       |                      |     |      |               |                   |              |
|      | Lighting Upgrades                | 1   | ea.  | \$ 37,199.25          | \$ 37,199.25         | 1   | ea.  | \$ 20,023.50  | \$ 20,023.50      | \$ 57,222.75 |
|      | Subtotal                         |     |      |                       | \$ 37,199.25         |     |      |               | \$ 20,023.50      |              |

Notes:

1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
3. Bonds not included in estimate.
4. Escalation not included in estimate.

o "This is an Opinion of Probable Construction Cost only. CDM has no control over the cost of labor, materials, equipment, or services furnished, over schedules, over contractor's methods of determining prices, competitive bidding, market conditions or negotiating terms. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids. There are not any costs provided for: Change Orders, Design Engineering, Construction Oversight, Client Costs, Finance or Funding Costs, Legal Fees, Land Acquisition or temporary/permanent Easements, Operations, or any other costs associated with this project that are not specifically part of the bidding contractor's proposed scope.

|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 57,222.75 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 8,583.41  |
| SUB-TOTAL w/ OH & P =  | \$ | 65,806.16 |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 16,451.54 |
| BUDGET COST ESTIMATE = | \$ | 82,257.70 |

# CDMSmith

11 British American Blvd  
Latham, NY 12110  
Phone (518) 782-4500  
Fax (518) 786-3810

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Education  
Estimate by: RG  
Checked by: JM

| ITEM | DESCRIPTION                     | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|---------------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|--------------|
| 1    | <b>Wall High School - Total</b> |     |      |                       |                      |     |      |               |                   |              |
|      | Lighting Upgrades               | 1   | ea.  | \$ 33,781.00          | \$ 33,781.00         | 1   | ea.  | \$ 21,457.00  | \$ 21,457.00      | \$ 55,238.00 |
|      | Subtotal                        |     |      |                       | \$ 33,781.00         |     |      |               | \$ 21,457.00      |              |

### Notes:

1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
3. Bonds not included in estimate.
4. Escalation not included in estimate.

o "This is an Opinion of Probable Construction Cost only. CDM has no control over the cost of labor, materials, equipment, or services furnished, over schedules, over contractor's methods of determining prices, competitive bidding, market conditions or negotiating terms. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids. There are not any costs provided for: Change Orders, Design Engineering, Construction Oversight, Client Costs, Finance or Funding Costs, Legal Fees, Land Acquisition or temporary/permanent Easements, Operations, or any other costs associated with this project that are not specifically part of the bidding contractor's proposed scope.

|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 55,238.00 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 8,285.70  |
| SUB-TOTAL w/ OH & P =  | \$ | 63,523.70 |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 15,880.93 |
| BUDGET COST ESTIMATE = | \$ | 79,404.63 |

| ITEM | DESCRIPTION                        | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL           |
|------|------------------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|-----------------|
| 1    | <b>Allenwood Elementary School</b> |     |      |                       |                      |     |      |               |                   |                 |
|      | Solar                              | 1   | ea.  | \$ 1,427,607.65       | \$ 1,427,607.65      | 1   | ea.  | \$ 611,831.85 | \$ 611,831.85     | \$ 2,039,439.50 |
|      | Subtotal                           |     |      |                       | \$ 1,427,607.65      |     |      |               | \$ 611,831.85     |                 |

### Notes:

1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
3. Bonds not included in estimate.
4. Escalation not included in estimate.

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|                        |    |              |
|------------------------|----|--------------|
| SUBTOTAL =             | \$ | 2,039,439.50 |
| CONTINGENCY % =        |    | 0.25         |
| CONTINGENCY =          | \$ | 509,859.88   |
| BUDGET COST ESTIMATE = | \$ | 2,549,299.38 |

# CDMSmith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Education  
Estimate by: RG  
Checked by: JM

| ITEM | DESCRIPTION               | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL           |
|------|---------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|-----------------|
| 1    | Central Elementary School |     |      |                       |                      |     |      |               |                   |                 |
|      | Solar                     | 1   | ea.  | \$ 784,744.49         | \$ 784,744.49        | 1   | ea.  | \$ 336,319.07 | \$ 336,319.07     | \$ 1,121,063.55 |
|      | Subtotal                  |     |      |                       | \$ 784,744.49        |     |      |               | \$ 336,319.07     |                 |

SUBTOTAL = \$ 1,121,063.55  
CONTINGENCY % = 0.25  
CONTINGENCY = \$ 280,265.89  
BUDGET COST ESTIMATE = \$ 1,401,329.44

- Notes:
1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
  2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
  3. Bonds not included in estimate.
  4. Escalation not included in estimate.

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| ITEM | DESCRIPTION                | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL           |
|------|----------------------------|-----|------|-----------------------|----------------------|-----|------|---------------|-------------------|-----------------|
| 1    | Old Mill Elementary School |     |      |                       |                      |     |      |               |                   |                 |
|      | Solar                      | 1   | ea.  | \$ 2,104,377.10       | \$ 2,104,377.10      | 1   | ea.  | \$ 901,875.90 | \$ 901,875.90     | \$ 3,006,253.00 |
|      | Subtotal                   |     |      |                       | \$ 2,104,377.10      |     |      |               | \$ 901,875.90     |                 |

SUBTOTAL = \$ 3,006,253.00  
CONTINGENCY % = 0.25  
CONTINGENCY = \$ 751,563.25  
BUDGET COST ESTIMATE = \$ 3,757,816.25

- Notes:
1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
  2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
  3. Bonds not included in estimate.
  4. Escalation not included in estimate.

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# CDMSmith

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Latham, NY 12110  
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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Education  
Estimate by: RG  
Checked by: JM

| ITEM | DESCRIPTION              | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST   | LABOR<br>SUBTOTAL | TOTAL           |
|------|--------------------------|-----|------|-----------------------|----------------------|-----|------|-----------------|-------------------|-----------------|
| 1    | Wall Intermediate School |     |      |                       |                      |     |      |                 |                   |                 |
|      | Solar                    | 1   | ea.  | \$ 5,495,005.60       | \$ 5,495,005.60      | 1   | ea.  | \$ 2,355,002.40 | \$ 2,355,002.40   | \$ 7,850,008.00 |
|      | Subtotal                 |     |      |                       | \$ 5,495,005.60      |     |      |                 | \$ 2,355,002.40   |                 |

SUBTOTAL = \$ 7,850,008.00

CONTINGENCY % = 0.25

CONTINGENCY = \$ 1,962,502.00

BUDGET COST ESTIMATE = \$ 9,812,510.00

- Notes:
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  3. Bonds not included in estimate.
  4. Escalation not included in estimate.

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| ITEM | DESCRIPTION      | QTY | UNIT | MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | LABOR<br>COST   | LABOR<br>SUBTOTAL | TOTAL            |
|------|------------------|-----|------|-----------------------|----------------------|-----|------|-----------------|-------------------|------------------|
| 1    | Wall High School |     |      |                       |                      |     |      |                 |                   |                  |
|      | Solar            | 1   | ea.  | \$ 10,241,885.50      | \$ 10,241,885.50     | 1   | ea.  | \$ 4,389,379.50 | \$ 4,389,379.50   | \$ 14,631,265.00 |
|      | Subtotal         |     |      |                       | \$ 10,241,885.50     |     |      |                 | \$ 4,389,379.50   |                  |

SUBTOTAL = \$ 14,631,265.00

CONTINGENCY % = 0.25

CONTINGENCY = \$ 3,657,816.25

BUDGET COST ESTIMATE = \$ 18,289,081.25

- Notes:
1. CDM has no control over the cost of labor, materials, equipment, services furnished or market conditions.
  2. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids.
  3. Bonds not included in estimate.
  4. Escalation not included in estimate.

o "This is an Opinion of Probable Construction Cost only. CDM has no control over the cost of labor, materials, equipment, or services furnished, over schedules, over contractor's methods of determining prices, competitive bidding, market conditions or negotiating terms. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids. There are not any costs provided for: Change Orders, Design Engineering, Construction Oversight, Client Costs, Finance or Funding Costs, Legal Fees, Land Acquisition or temporary/permanent Easements, Operations, or any other costs associated with this project that are not specifically part of the bidding contractor's proposed scope.

# CDM Smith

11 British American Blvd  
Latham, NY 12110  
Phone (518) 782-4500  
Fax (518) 786-3810

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                               | QTY    | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY    | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL         |
|------|-------------------------------------------|--------|------|------------------------|----------------------|--------|------|-----------------|-------------------|---------------|
| 1    | <b>Wall Intermediate: Wall Insulation</b> |        |      |                        |                      |        |      |                 |                   |               |
| 2    | 2" Exterior Insulation Finishing System   | 23,070 | SF   | \$ 2.40                | \$ 55,368.00         | 23,070 | SF   | \$5.20          | \$119,964.00      | \$ 175,332.00 |
|      |                                           |        | SF   | \$ 0.30                | \$ -                 | 0      | SF   | \$0.48          | \$0.00            | \$ -          |
|      | Subtotal                                  |        |      |                        | 55,368.00            |        |      |                 | 119,964.00        |               |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, wall finishing or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

1. This is a Conceptual Level Opinion of Probable Cost only. CDM has no control over the cost of labor, materials, equipment, or services furnished, over schedules, over contractor's methods of determining prices, competitive bidding (at least 3 each - both prime bidders and major subcontractors), market conditions or negotiating terms. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids. There are not any costs provided for: Change Orders, Client Costs, Finance or Funding Costs, Legal Fees, Land Acquisition or temporary/permanent Easements, Operations, or any other costs associated with this project that are not specifically part of the bidding contractor's proposed scope.
2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |            |
|------------------------|----|------------|
| SUBTOTAL =             | \$ | 175,332.00 |
| MARKUP % =             | \$ | 0.15       |
| MARKUP =               | \$ | 26,300     |
| SUB-TOTAL w/ OH & P =  | \$ | 201,632    |
| CONTINGENCY % =        |    | 0.25       |
| CONTINGENCY =          | \$ | 50,408     |
| BUDGET COST ESTIMATE = | \$ | 252,040    |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                                                  | QTY    | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY    | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL         |
|------|------------------------------------------------------------------------------|--------|------|------------------------|----------------------|--------|------|-----------------|-------------------|---------------|
| 1    | <b>Allenwood: Wall Insulation</b><br>2" Exterior Insulation Finishing System | 14,430 | SF   | \$ 2.40                | \$ 34,632.00         | 14,430 | SF   | \$5.20          | \$75,036.00       | \$ 109,668.00 |
|      | Subtotal                                                                     |        |      |                        | 34,632.00            |        |      |                 | 75,036.00         |               |

\*Pricing per RS Means COSTWORKS and Vender. Does not include any finishing, modifications to venting, roof, or ceiling access.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |            |
|------------------------|----|------------|
| SUBTOTAL =             | \$ | 109,668.00 |
| MARKUP % =             | \$ | 0.15       |
| MARKUP =               | \$ | 16,450     |
| SUB-TOTAL w/ OH & P =  | \$ | 126,118    |
| CONTINGENCY % =        |    | 0.25       |
| CONTINGENCY =          | \$ | 31,530     |
| BUDGET COST ESTIMATE = | \$ | 157,648    |

# CDM Smith

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Latham, NY 12110  
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Fax (518) 786-3810

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                       | QTY    | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY    | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|-----------------------------------|--------|------|------------------------|----------------------|--------|------|-----------------|-------------------|--------------|
| 1    | <b>Allenwood: Roof Insulation</b> |        |      |                        |                      |        |      |                 |                   |              |
| 2    | 2" Polyisocyanurate Insulation    | 41,600 | SF   | \$ 1.18                | \$ 49,088.00         | 41,600 | SF   | \$0.33          | \$13,728.00       | \$ 62,816.00 |
|      |                                   |        | SF   | \$ -                   | \$ -                 | 0      | SF   | \$0.48          | \$0.00            | \$ -         |
|      | Subtotal                          |        |      |                        | 49,088.00            |        |      |                 | 13,728.00         |              |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, wall finishing or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                                  |           |               |
|----------------------------------|-----------|---------------|
| SUBTOTAL =                       | \$        | 62,816.00     |
| MARKUP % =                       | \$        | 0.15          |
| MARKUP =                         | \$        | 9,422         |
| <b>SUB-TOTAL w/ OH &amp; P =</b> | <b>\$</b> | <b>72,238</b> |
| CONTINGENCY % =                  |           | 0.25          |
| CONTINGENCY =                    | \$        | 18,060        |
| <b>BUDGET COST ESTIMATE =</b>    | <b>\$</b> | <b>90,298</b> |



# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                             | QTY    | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY    | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL         |
|------|-----------------------------------------|--------|------|------------------------|----------------------|--------|------|-----------------|-------------------|---------------|
| 1    | <b>Central: Wall Insulation</b>         |        |      |                        |                      |        |      |                 |                   |               |
| 2    | 2" Exterior Insulation Finishing System | 20,700 | SF   | \$ 2.40                | \$ 49,680.00         | 20,700 | SF   | \$5.20          | \$107,640.00      | \$ 157,320.00 |
|      |                                         |        | SF   | \$ 0.30                | \$ -                 | 0      | SF   | \$0.48          | \$0.00            | \$ -          |
|      | Subtotal                                |        |      |                        | 49,680.00            |        |      |                 | 107,640.00        |               |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, wall finishing or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                                  |           |                |
|----------------------------------|-----------|----------------|
| SUBTOTAL =                       | \$        | 157,320.00     |
| MARKUP % =                       | \$        | 0.15           |
| MARKUP =                         | \$        | 23,598         |
| <b>SUB-TOTAL w/ OH &amp; P =</b> | <b>\$</b> | <b>180,918</b> |
| CONTINGENCY % =                  |           | 0.25           |
| CONTINGENCY =                    | \$        | 45,230         |
| <b>BUDGET COST ESTIMATE =</b>    | <b>\$</b> | <b>226,148</b> |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION              | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL       |
|------|--------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|-------------|
| 1    | Allenwood: HW VFD        | 2   | Ea   | \$ 1,725.00            | \$ 3,450.00          | 2   | Ea   | \$815.00        | \$1,630.00        | \$ 5,080.00 |
| 2    | Variable Frequency Drive |     | Ea   | \$ -                   | \$ -                 | 0   | Ea   | \$0.48          | \$0.00            | \$ -        |
|      | Subtotal                 |     |      |                        | 3,450.00             |     |      |                 | 1,630.00          |             |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, repairs to existing problems, or existing motor replacement.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |          |
|------------------------|----|----------|
| SUBTOTAL =             | \$ | 5,080.00 |
| MARKUP % =             | \$ | 0.15     |
| MARKUP =               | \$ | 762      |
| SUB-TOTAL w/ OH & P =  | \$ | 5,842    |
| CONTINGENCY % =        |    | 0.25     |
| CONTINGENCY =          | \$ | 1,461    |
| BUDGET COST ESTIMATE = | \$ | 7,303    |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION               | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL       |
|------|---------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|-------------|
| 1    | Wall Intermediate: HW VFD | 2   | Ea   | \$ 1,725.00            | \$ 3,450.00          | 2   | Ea   | \$815.00        | \$1,630.00        | \$ 5,080.00 |
| 2    | Variable Frequency Drive  |     | Ea   | \$ -                   | \$ -                 | 0   | Ea   | \$0.48          | \$0.00            | \$ -        |
|      | Subtotal                  |     |      |                        | 3,450.00             |     |      |                 | 1,630.00          |             |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, repairs to existing problems, or existing motor replacement.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |          |
|------------------------|----|----------|
| SUBTOTAL =             | \$ | 5,080.00 |
| MARKUP % =             | \$ | 0.15     |
| MARKUP =               | \$ | 762      |
| SUB-TOTAL w/ OH & P =  | \$ | 5,842    |
| CONTINGENCY % =        |    | 0.25     |
| CONTINGENCY =          | \$ | 1,461    |
| BUDGET COST ESTIMATE = | \$ | 7,303    |

# CDM Smith

11 British American Blvd  
Latham, NY 12110  
Phone (518) 782-4500  
Fax (518) 786-3810

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION              | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL       |
|------|--------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|-------------|
| 1    | Old Mill: HW VFD         | 2   | Ea   | \$ 1,725.00            | \$ 3,450.00          | 2   | Ea   | \$815.00        | \$1,630.00        | \$ 5,080.00 |
| 2    | Variable Frequency Drive |     | Ea   | \$ -                   | \$ -                 | 0   | Ea   | \$0.48          | \$0.00            | \$ -        |
|      | Subtotal                 |     |      |                        | 3,450.00             |     |      |                 | 1,630.00          |             |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, repairs to existing problems, or existing motor replacement.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

1. This is a Conceptual Level Opinion of Probable Cost only. CDM has no control over the cost of labor, materials, equipment, or services furnished, over schedules, over contractor's methods of determining prices, competitive bidding (at least 3 each - both prime bidders and major subcontractors), market conditions or negotiating terms. CDM does not guarantee that this opinion will not vary from actual cost, or contractor's bids. There are not any costs provided for: Change Orders, Client Costs, Finance or Funding Costs, Legal Fees, Land Acquisition or temporary/permanent Easements, Operations, or any other costs associated with this project that are not specifically part of the bidding contractor's proposed scope.
2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |          |
|------------------------|----|----------|
| SUBTOTAL =             | \$ | 5,080.00 |
| MARKUP % =             | \$ | 0.15     |
| MARKUP =               | \$ | 762      |
| SUB-TOTAL w/ OH & P =  | \$ | 5,842    |
| CONTINGENCY % =        |    | 0.25     |
| CONTINGENCY =          | \$ | 1,461    |
| BUDGET COST ESTIMATE = | \$ | 7,303    |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                 | QTY   | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY   | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|---------------------------------------------|-------|------|------------------------|----------------------|-------|------|-----------------|-------------------|--------------|
| 1    | <b>Old Mill: Window Replacement</b>         |       |      |                        |                      |       |      |                 |                   |              |
|      | Window Demolition                           | 2,640 | SF   | \$ -                   | \$ -                 | 2,640 | SF   | \$2.30          | \$6,072.00        | \$ 6,072.00  |
| 2    | Windows, Alum Frame, Low E, Insulated Glass | 2,640 | SF   | \$ 19.00               | \$ 50,160.00         | 2,640 | SF   | \$5.00          | \$13,200.00       | \$ 63,360.00 |
|      | Subtotal                                    |       |      |                        | 50,160.00            |       |      |                 | 19,272.00         |              |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, wall finishing or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 69,432.00 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 10,415    |
| SUB-TOTAL w/ OH & P =  | \$ | 79,847    |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 19,962    |
| BUDGET COST ESTIMATE = | \$ | 99,809    |

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                  | QTY   | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY   | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|----------------------------------------------|-------|------|------------------------|----------------------|-------|------|-----------------|-------------------|--------------|
| 1    | <b>Wall Intermediate: Window Replacement</b> |       |      |                        |                      |       |      |                 |                   |              |
|      | Window Demolition                            | 1,945 | SF   | \$ -                   | \$ -                 | 1,945 | SF   | \$2.30          | \$4,473.50        | \$ 4,473.50  |
| 2    | Windows, Alum Frame, Low E, Insulated Glass  | 1,945 | SF   | \$ 19.00               | \$ 36,955.00         | 1,945 | SF   | \$5.00          | \$9,725.00        | \$ 46,680.00 |
|      | Subtotal                                     |       |      |                        | 36,955.00            |       |      |                 | 14,198.50         |              |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, wall finishing or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |           |
|------------------------|----|-----------|
| SUBTOTAL =             | \$ | 51,153.50 |
| MARKUP % =             | \$ | 0.15      |
| MARKUP =               | \$ | 7,673     |
| SUB-TOTAL w/ OH & P =  | \$ | 58,827    |
| CONTINGENCY % =        |    | 0.25      |
| CONTINGENCY =          | \$ | 14,707    |
| BUDGET COST ESTIMATE = | \$ | 73,533    |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                 | QTY   | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY   | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|---------------------------------------------|-------|------|------------------------|----------------------|-------|------|-----------------|-------------------|--------------|
| 1    | Wall High: Window Replacement               |       |      |                        |                      |       |      |                 |                   |              |
|      | Window Demolition                           | 3,970 | SF   | \$ -                   | \$ -                 | 3,970 | SF   | \$2.30          | \$9,131.00        | \$ 9,131.00  |
| 2    | Windows, Alum Frame, Low E, Insulated Glass | 3,970 | SF   | \$ 19.00               | \$ 75,430.00         | 3,970 | SF   | \$5.00          | \$19,850.00       | \$ 95,280.00 |
|      | Subtotal                                    |       |      |                        | 75,430.00            |       |      |                 | 28,981.00         |              |

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\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |            |
|------------------------|----|------------|
| SUBTOTAL =             | \$ | 104,411.00 |
| MARKUP % =             | \$ | 0.15       |
| MARKUP =               | \$ | 15,662     |
| SUB-TOTAL w/ OH & P =  | \$ | 120,073    |
| CONTINGENCY % =        |    | 0.25       |
| CONTINGENCY =          | \$ | 30,018     |
| BUDGET COST ESTIMATE = | \$ | 150,091    |



# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                  | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|----------------------------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|--------------|
| 1    | Wall High: Steam Boiler<br>Boiler Demolition | 3   | Ea   | \$ -                   | \$ -                 | 3   | Ea   | \$4,250.00      | \$12,750.00       | \$ 12,750.00 |
| 2    | Steam Boiler, Gas, 3500 MBH, High Efficiency | 3   | Ea   | \$ 21,700.00           | \$ 65,100.00         | 3   | Ea   | \$11,500.00     | \$34,500.00       | \$ 99,600.00 |
| 3    | Piping, Venting, Wiring                      | 3   | Ea   | \$ 5,500.00            | \$ 16,500.00         | 3   | Ea   | \$3,500.00      | \$10,500.00       | \$ 27,000.00 |
| 4    | Boiler Controls                              | 1   | Ea   | \$ 5,500.00            | \$ 5,500.00          | 1   | Ea   | \$1,237.00      | \$1,237.00        | \$ 6,737.00  |
|      | Subtotal                                     |     |      |                        | 87,100.00            |     |      |                 | 58,987.00         |              |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, asbestos or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                                     |                |
|-------------------------------------|----------------|
| SUBTOTAL = \$                       | 146,087.00     |
| MARKUP % = \$                       | 0.15           |
| MARKUP = \$                         | 21,913         |
| <b>SUB-TOTAL w/ OH &amp; P = \$</b> | <b>168,000</b> |
| CONTINGENCY % =                     | 0.25           |
| CONTINGENCY = \$                    | 42,000         |
| <b>BUDGET COST ESTIMATE = \$</b>    | <b>210,000</b> |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                  | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|----------------------------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|--------------|
| 1    | <b>Central: Steam Boiler</b>                 |     |      |                        |                      |     |      |                 |                   |              |
|      | Boiler Demolition                            | 2   | Ea   | \$ -                   | \$ -                 | 2   | Ea   | \$4,250.00      | \$8,500.00        | \$ 8,500.00  |
| 2    | Steam Boiler, Gas, 3500 MBH, High Efficiency | 2   | Ea   | \$ 21,700.00           | \$ 43,400.00         | 2   | Ea   | \$11,500.00     | \$23,000.00       | \$ 66,400.00 |
| 3    | Piping, Venting, Wiring                      | 2   | Ea   | \$ 5,500.00            | \$ 11,000.00         | 2   | Ea   | \$3,500.00      | \$7,000.00        | \$ 18,000.00 |
| 4    | Boiler Controls                              | 1   | Ea   | \$ 5,500.00            | \$ 5,500.00          | 1   | Ea   | \$1,237.00      | \$1,237.00        | \$ 6,737.00  |
|      | Subtotal                                     |     |      |                        | 59,900.00            |     |      |                 | 39,737.00         |              |

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                                     |                |
|-------------------------------------|----------------|
| SUBTOTAL = \$                       | 99,637.00      |
| MARKUP % = \$                       | 0.15           |
| MARKUP = \$                         | 14,946         |
| <b>SUB-TOTAL w/ OH &amp; P = \$</b> | <b>114,583</b> |
| CONTINGENCY % =                     | 0.25           |
| CONTINGENCY = \$                    | 28,646         |
| <b>BUDGET COST ESTIMATE = \$</b>    | <b>143,228</b> |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                                   | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|---------------------------------------------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|--------------|
| 1    | Allenwood: Condensing Boiler<br>Demolition, Boiler and Piping | 2   | SF   | \$ -                   | \$ -                 | 2   | SF   | \$4,250.00      | \$8,500.00        | \$ 8,500.00  |
| 2    | Condensing Boiler, 2000 MBH                                   | 2   | SF   | \$ 36,500.00           | \$ 73,000.00         | 2   | SF   | \$12,100.00     | \$24,200.00       | \$ 97,200.00 |
| 3    | Piping, Venting                                               | 2   | SF   | \$ 5,500.00            | \$ 11,000.00         | 2   | SF   | \$3,500.00      | \$7,000.00        | \$ 18,000.00 |
| 4    | Boiler Controls                                               | 1   | SF   | \$ 5,500.00            | \$ 5,500.00          | 1   | SF   | \$1,230.00      | \$1,230.00        | \$ 6,730.00  |
|      | Subtotal                                                      |     |      |                        | 89,500.00            |     |      |                 | 40,930.00         |              |

\*Pricing per RS Means COSTWORKS and Vender. Does not include site problems, asbestos or repairs to existing problems.

\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                        |    |            |
|------------------------|----|------------|
| SUBTOTAL =             | \$ | 130,430.00 |
| MARKUP % =             | \$ | 0.15       |
| MARKUP =               | \$ | 19,565     |
| SUB-TOTAL w/ OH & P =  | \$ | 149,995    |
| CONTINGENCY % =        |    | 0.25       |
| CONTINGENCY =          | \$ | 37,499     |
| BUDGET COST ESTIMATE = | \$ | 187,493    |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                                                           | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|-----------------------------------------------------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|--------------|
| 1    | Wall Intermediate: Condensing Boiler<br>Demolition, Boiler and Piping | 2   | SF   | \$ -                   | \$ -                 | 2   | SF   | \$4,250.00      | \$8,500.00        | \$ 8,500.00  |
| 2    | Condensing Boiler, 2000 MBH                                           | 2   | SF   | \$ 36,500.00           | \$ 73,000.00         | 2   | SF   | \$12,100.00     | \$24,200.00       | \$ 97,200.00 |
| 3    | Piping, Venting                                                       | 2   | SF   | \$ 5,500.00            | \$ 11,000.00         | 2   | SF   | \$3,500.00      | \$7,000.00        | \$ 18,000.00 |
| 4    | Boiler Controls                                                       | 1   | SF   | \$ 5,500.00            | \$ 5,500.00          | 1   | SF   | \$1,230.00      | \$1,230.00        | \$ 6,730.00  |
|      | Subtotal                                                              |     |      |                        | 89,500.00            |     |      |                 | 40,930.00         |              |

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\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                           |            |
|---------------------------|------------|
| SUBTOTAL = \$             | 130,430.00 |
| MARKUP % = \$             | 0.15       |
| MARKUP = \$               | 19,565     |
| SUB-TOTAL w/ OH & P = \$  | 149,995    |
| CONTINGENCY % =           | 0.25       |
| CONTINGENCY = \$          | 37,499     |
| BUDGET COST ESTIMATE = \$ | 187,493    |

# CDM Smith

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## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Location: Wall Township Board of Ed  
Estimate by: BRM  
Checked by: CDW

| ITEM | DESCRIPTION                        | QTY | UNIT | *MATERIAL<br>UNIT COST | MATERIAL<br>SUBTOTAL | QTY | UNIT | **LABOR<br>COST | LABOR<br>SUBTOTAL | TOTAL        |
|------|------------------------------------|-----|------|------------------------|----------------------|-----|------|-----------------|-------------------|--------------|
| 1    | <b>Old Mill: Condensing Boiler</b> |     |      |                        |                      |     |      |                 |                   |              |
|      | Demolition, Boiler and Piping      | 2   | SF   | \$ -                   | \$ -                 | 2   | SF   | \$4,250.00      | \$8,500.00        | \$ 8,500.00  |
| 2    | Condensing Boiler, 2000 MBH        | 2   | SF   | \$ 36,500.00           | \$ 73,000.00         | 2   | SF   | \$12,100.00     | \$24,200.00       | \$ 97,200.00 |
| 3    | Piping, Venting                    | 2   | SF   | \$ 5,500.00            | \$ 11,000.00         | 2   | SF   | \$3,500.00      | \$7,000.00        | \$ 18,000.00 |
| 4    | Boiler Controls                    | 1   | SF   | \$ 5,500.00            | \$ 5,500.00          | 1   | SF   | \$1,230.00      | \$1,230.00        | \$ 6,730.00  |
|      | Subtotal                           |     |      |                        | 89,500.00            |     |      |                 | 40,930.00         |              |

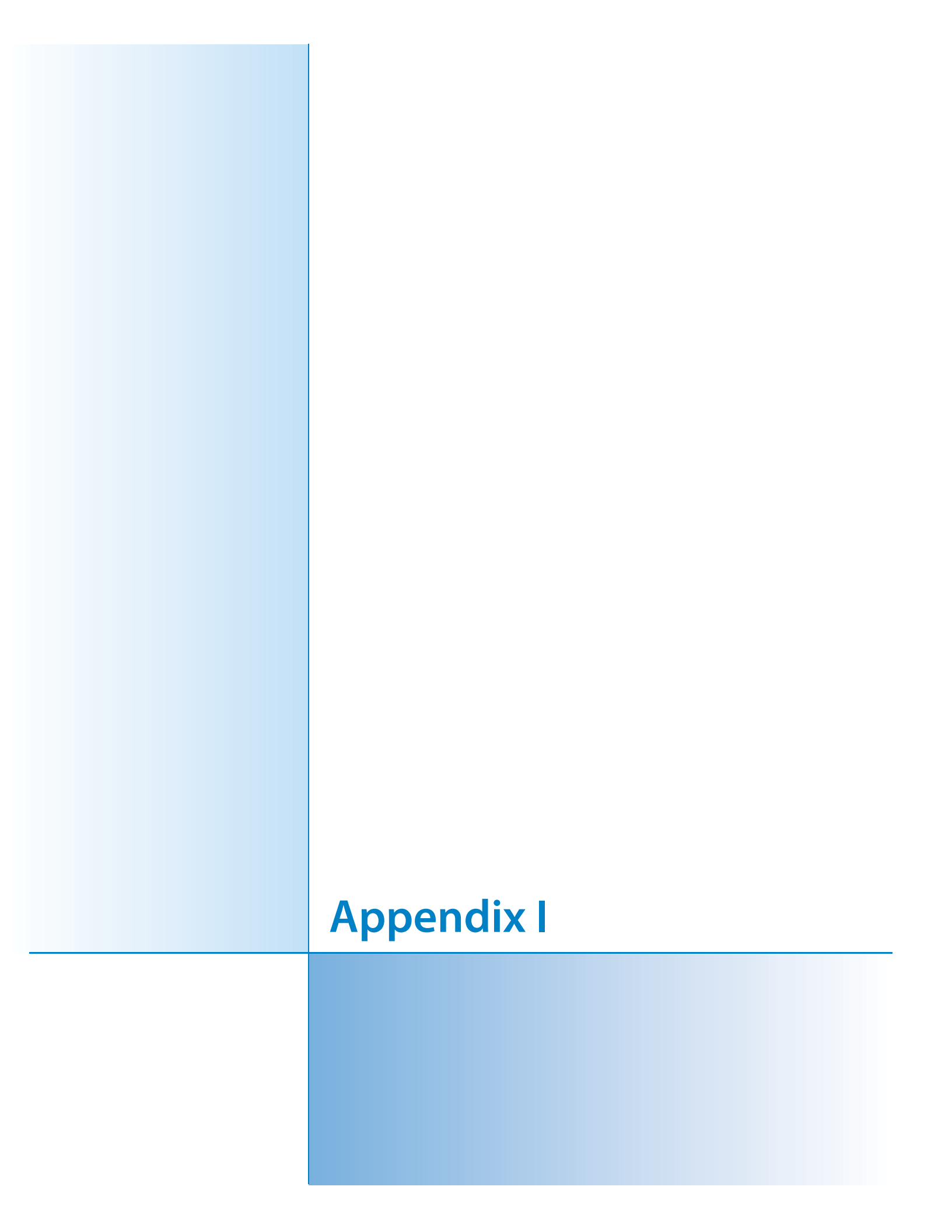
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\*\*Includes installation cost per RS Means COSTWORKS.

### Notes:

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2. Since some of the work will occur in older buildings, there is the potential to encounter asbestos or other materials requiring special removal and handling. Currently available information is not adequate to determine if such conditions exist, consequently these costs are not included in this estimate.
3. This estimate does not consider escalation of costs over time

|                                  |           |                |
|----------------------------------|-----------|----------------|
| SUBTOTAL =                       | \$        | 130,430.00     |
| MARKUP % =                       | \$        | 0.15           |
| MARKUP =                         | \$        | 19,565         |
| <b>SUB-TOTAL w/ OH &amp; P =</b> | <b>\$</b> | <b>149,995</b> |
| CONTINGENCY % =                  |           | 0.25           |
| CONTINGENCY =                    | \$        | 37,499         |
| <b>BUDGET COST ESTIMATE =</b>    | <b>\$</b> | <b>187,493</b> |

The graphic consists of a large, light blue rectangle on the left side of the page. A thin blue vertical line separates this rectangle from the rest of the page. A thin blue horizontal line extends from the vertical line across the page. The text "Appendix I" is positioned at the intersection of these lines, with the "I" being significantly larger than the other characters. A medium blue rectangle is located at the bottom right of the page, below the horizontal line.

# Appendix I

IRR, NPV, AROI - Wind Energy Systems

Financial Calculations

Based on inflation of: 3%  
O&M inflation: 3%

| Wind Turbine - Minimum Wind Speed |                |           |             | Wind Turbine - Maximum Wind Speed |                |           |             | Wind Turbine - Average Wind Speed |                |           |             |
|-----------------------------------|----------------|-----------|-------------|-----------------------------------|----------------|-----------|-------------|-----------------------------------|----------------|-----------|-------------|
| REIP Incentive: \$0               |                |           |             | REIP Incentive: \$0               |                |           |             | REIP Incentive: \$0               |                |           |             |
| Year                              | Energy Savings | REC Sales | Cash Flow   | Year                              | Energy Savings | REC Sales | Cash Flow   | Year                              | Energy Savings | REC Sales | Cash Flow   |
| 0                                 |                |           | (\$450,000) | 0                                 |                |           | (\$450,000) | 0                                 |                |           | (\$450,000) |
| 1                                 | \$11,693.1     | \$1,949   | \$13,642    | 1                                 | \$23,726.9     | \$3,954   | \$27,681    | 1                                 | \$18,694.2     | \$3,116   | \$21,810    |
| 2                                 | \$11,983.7     | \$1,939   | \$13,923    | 2                                 | \$24,316.5     | \$3,935   | \$28,251    | 2                                 | \$19,158.8     | \$3,100   | \$22,259    |
| 3                                 | \$12,281.5     | \$1,929   | \$14,211    | 3                                 | \$24,920.7     | \$3,915   | \$28,836    | 3                                 | \$19,634.8     | \$3,085   | \$22,719    |
| 4                                 | \$12,586.7     | \$1,920   | \$14,506    | 4                                 | \$25,540.0     | \$3,895   | \$29,435    | 4                                 | \$20,122.8     | \$3,069   | \$23,192    |
| 5                                 | \$12,899.4     | \$1,910   | \$14,810    | 5                                 | \$26,174.7     | \$3,876   | \$30,051    | 5                                 | \$20,622.8     | \$3,054   | \$23,677    |
| 6                                 | \$13,220.0     | \$1,901   | \$15,121    | 6                                 | \$26,825.1     | \$3,857   | \$30,682    | 6                                 | \$21,135.3     | \$3,039   | \$24,174    |
| 7                                 | \$13,548.5     | \$1,891   | \$15,440    | 7                                 | \$27,491.7     | \$3,837   | \$31,329    | 7                                 | \$21,660.5     | \$3,023   | \$24,684    |
| 8                                 | \$13,885.2     | \$1,882   | \$15,767    | 8                                 | \$28,174.9     | \$3,818   | \$31,993    | 8                                 | \$22,198.8     | \$3,008   | \$25,207    |
| 9                                 | \$14,230.2     | \$1,872   | \$16,102    | 9                                 | \$28,875.0     | \$3,799   | \$32,674    | 9                                 | \$22,750.4     | \$2,993   | \$25,744    |
| 10                                | \$14,583.9     | \$1,863   | \$16,447    | 10                                | \$29,592.6     | \$3,780   | \$33,373    | 10                                | \$23,315.8     | \$2,978   | \$26,294    |
| 11                                | \$14,946.3     | \$1,854   | \$16,800    | 11                                | \$30,328.0     | \$3,761   | \$34,089    | 11                                | \$23,895.2     | \$2,963   | \$26,859    |
| 12                                | \$15,317.7     | \$1,844   | \$17,162    | 12                                | \$31,081.6     | \$3,742   | \$34,824    | 12                                | \$24,489.0     | \$2,949   | \$27,438    |
| 13                                | \$15,698.3     | \$1,835   | \$17,533    | 13                                | \$31,854.0     | \$3,724   | \$35,578    | 13                                | \$25,097.5     | \$2,934   | \$28,031    |
| 14                                | \$16,088.4     | \$1,826   | \$17,914    | 14                                | \$32,645.6     | \$3,705   | \$36,351    | 14                                | \$25,721.2     | \$2,919   | \$28,640    |
| 15                                | \$16,488.2     | \$1,817   | \$18,305    | 15                                | \$33,456.8     | \$3,686   | \$37,143    | 15                                | \$26,360.3     | \$2,905   | \$29,265    |
| 16                                | \$16,898.0     | \$1,808   | \$18,706    | 16                                | \$34,288.2     | \$3,668   | \$37,956    | 16                                | \$27,015.4     | \$2,890   | \$29,905    |
| 17                                | \$17,317.9     | \$1,799   | \$19,117    | 17                                | \$35,140.3     | \$3,650   | \$38,790    | 17                                | \$27,686.7     | \$2,876   | \$30,562    |
| 18                                | \$17,748.2     | \$1,790   | \$19,538    | 18                                | \$36,013.5     | \$3,631   | \$39,645    | 18                                | \$28,374.8     | \$2,861   | \$31,236    |
| 19                                | \$18,189.3     | \$1,781   | \$19,970    | 19                                | \$36,908.4     | \$3,613   | \$40,522    | 19                                | \$29,079.9     | \$2,847   | \$31,927    |
| 20                                | \$18,641.3     | \$1,772   | \$20,413    | 20                                | \$37,825.6     | \$3,595   | \$41,421    | 20                                | \$29,802.5     | \$2,833   | \$32,635    |
| 21                                | \$19,104.5     | \$1,763   | \$20,867    | 21                                | \$38,765.6     | \$3,577   | \$42,343    | 21                                | \$30,543.1     | \$2,818   | \$33,362    |
| 22                                | \$19,579.3     | \$1,754   | \$21,333    | 22                                | \$39,728.9     | \$3,559   | \$43,288    | 22                                | \$31,302.1     | \$2,804   | \$34,106    |
| 23                                | \$20,065.8     | \$1,745   | \$21,811    | 23                                | \$40,716.2     | \$3,542   | \$44,258    | 23                                | \$32,079.9     | \$2,790   | \$34,870    |
| 24                                | \$20,564.4     | \$1,737   | \$22,301    | 24                                | \$41,728.0     | \$3,524   | \$45,252    | 24                                | \$32,877.1     | \$2,776   | \$35,654    |
| 25                                | \$21,075.5     | \$1,728   | \$22,803    | 25                                | \$42,764.9     | \$3,506   | \$46,271    | 25                                | \$33,694.1     | \$2,763   | \$36,457    |
| IRR -0.09%                        |                |           |             | IRR 5.63%                         |                |           |             | IRR 3.52%                         |                |           |             |
| NPV (\$150,360.62)                |                |           |             | NPV \$158,008.03                  |                |           |             | NPV \$29,044.79                   |                |           |             |
| AROI -0.97%                       |                |           |             | AROI 2.15%                        |                |           |             | AROI 0.85%                        |                |           |             |



IRR, NPV, AROI - PV Solar Energy Systems

Financial Calculations

Based on inflation of: 3%  
O&M inflation: 3%

| Allenwood Elementary School |                |            |                  |                | Central Elementary School |                |            |                  |                | Wall High School |                |            |                  |                  |
|-----------------------------|----------------|------------|------------------|----------------|---------------------------|----------------|------------|------------------|----------------|------------------|----------------|------------|------------------|------------------|
|                             |                |            |                  |                |                           |                |            |                  |                |                  |                |            |                  |                  |
| Year                        | Energy Savings | SREC Sales | Maintenance Cost | Cash Flow      | Year                      | Energy Savings | SREC Sales | Maintenance Cost | Cash Flow      | Year             | Energy Savings | SREC Sales | Maintenance Cost | Cash Flow        |
| 0                           |                |            |                  | (\$2,549,299)  | 0                         |                |            |                  | (\$1,401,329)  | 0                |                |            |                  | (\$18,289,081)   |
| 1                           | \$37,722.1     | \$75,444   | (\$5,030)        | \$108,137      | 1                         | \$19,859.7     | \$39,719   | (\$2,648)        | \$56,931       | 1                | \$282,633.1    | \$565,266  | (\$37,684)       | \$810,215        |
| 2                           | \$38,659.5     | \$75,067   | (\$5,004)        | \$108,722      | 2                         | \$20,353.2     | \$39,521   | (\$2,635)        | \$57,239       | 2                | \$289,656.5    | \$562,440  | (\$37,496)       | \$814,600        |
| 3                           | \$39,620.2     | \$74,692   | (\$4,979)        | \$109,332      | 3                         | \$20,859.0     | \$39,323   | (\$2,622)        | \$57,561       | 3                | \$296,854.5    | \$559,628  | (\$37,309)       | \$819,174        |
| 4                           | \$40,604.7     | \$74,318   | (\$4,955)        | \$109,968      | 4                         | \$21,377.3     | \$39,127   | (\$2,608)        | \$57,895       | 4                | \$304,231.3    | \$556,830  | (\$37,122)       | \$823,939        |
| 5                           | \$41,613.8     | \$73,947   | (\$4,930)        | \$110,631      | 5                         | \$21,908.5     | \$38,931   | (\$2,595)        | \$58,244       | 5                | \$311,791.5    | \$554,045  | (\$36,936)       | \$828,901        |
| 6                           | \$42,647.9     | \$73,577   | (\$4,905)        | \$111,320      | 6                         | \$22,453.0     | \$38,736   | (\$2,582)        | \$58,607       | 6                | \$319,539.5    | \$551,275  | (\$36,752)       | \$834,063        |
| 7                           | \$43,707.7     | \$73,209   | (\$4,881)        | \$112,036      | 7                         | \$23,010.9     | \$38,543   | (\$2,570)        | \$58,984       | 7                | \$327,480.1    | \$548,519  | (\$36,568)       | \$839,431        |
| 8                           | \$44,793.8     | \$72,843   | (\$4,856)        | \$112,781      | 8                         | \$23,582.8     | \$38,350   | (\$2,557)        | \$59,376       | 8                | \$335,617.9    | \$545,776  | (\$36,385)       | \$845,009        |
| 9                           | \$45,906.9     | \$72,479   | (\$4,832)        | \$113,554      | 9                         | \$24,168.8     | \$38,158   | (\$2,544)        | \$59,783       | 9                | \$343,958.0    | \$543,047  | (\$36,203)       | \$850,802        |
| 10                          | \$47,047.7     | \$72,116   | (\$4,808)        | \$114,356      | 10                        | \$24,769.4     | \$37,967   | (\$2,531)        | \$60,206       | 10               | \$352,505.4    | \$540,332  | (\$36,022)       | \$856,815        |
| 11                          | \$48,216.9     | \$71,756   | (\$4,784)        | \$115,189      | 11                        | \$25,384.9     | \$37,777   | (\$2,518)        | \$60,644       | 11               | \$361,265.2    | \$537,630  | (\$35,842)       | \$863,054        |
| 12                          | \$49,415.0     | \$71,397   | (\$4,760)        | \$116,052      | 12                        | \$26,015.7     | \$37,589   | (\$2,506)        | \$61,098       | 12               | \$370,242.6    | \$534,942  | (\$35,663)       | \$869,522        |
| 13                          | \$50,643.0     | \$71,040   | (\$4,736)        | \$116,947      | 13                        | \$26,662.2     | \$37,401   | (\$2,493)        | \$61,569       | 13               | \$379,443.1    | \$532,268  | (\$35,485)       | \$876,226        |
| 14                          | \$51,901.5     | \$70,685   | (\$4,712)        | \$117,874      | 14                        | \$27,324.8     | \$37,214   | (\$2,481)        | \$62,058       | 14               | \$388,872.3    | \$529,606  | (\$35,307)       | \$883,171        |
| 15                          | \$53,191.2     | \$70,331   | (\$4,689)        | \$118,834      | 15                        | \$28,003.8     | \$37,028   | (\$2,469)        | \$62,563       | 15               | \$398,535.8    | \$526,958  | (\$35,131)       | \$890,363        |
| 16                          | \$54,513.0     | \$0        | (\$4,665)        | \$49,848       | 16                        | \$28,699.7     | \$0        | (\$2,456)        | \$26,244       | 16               | \$408,439.4    | \$0        | (\$34,955)       | \$373,484        |
| 17                          | \$55,867.7     | \$0        | (\$4,642)        | \$51,226       | 17                        | \$29,412.9     | \$0        | (\$2,444)        | \$26,969       | 17               | \$418,589.1    | \$0        | (\$34,780)       | \$383,809        |
| 18                          | \$57,256.0     | \$0        | (\$4,619)        | \$52,637       | 18                        | \$30,143.8     | \$0        | (\$2,432)        | \$27,712       | 18               | \$428,991.0    | \$0        | (\$34,606)       | \$394,385        |
| 19                          | \$58,678.8     | \$0        | (\$4,596)        | \$54,083       | 19                        | \$30,892.8     | \$0        | (\$2,420)        | \$28,473       | 19               | \$439,651.5    | \$0        | (\$34,433)       | \$405,218        |
| 20                          | \$60,137.0     | \$0        | (\$4,573)        | \$55,564       | 20                        | \$31,660.5     | \$0        | (\$2,407)        | \$29,253       | 20               | \$450,576.8    | \$0        | (\$34,261)       | \$416,316        |
| 21                          | \$61,631.4     | \$0        | (\$4,550)        | \$57,082       | 21                        | \$32,447.3     | \$0        | (\$2,395)        | \$30,052       | 21               | \$461,773.6    | \$0        | (\$34,090)       | \$427,684        |
| 22                          | \$63,162.9     | \$0        | (\$4,527)        | \$58,636       | 22                        | \$33,253.6     | \$0        | (\$2,383)        | \$30,870       | 22               | \$473,248.7    | \$0        | (\$33,919)       | \$439,329        |
| 23                          | \$64,732.5     | \$0        | (\$4,504)        | \$60,228       | 23                        | \$34,080.0     | \$0        | (\$2,371)        | \$31,708       | 23               | \$485,008.9    | \$0        | (\$33,750)       | \$451,259        |
| 24                          | \$66,341.1     | \$0        | (\$4,482)        | \$61,859       | 24                        | \$34,926.8     | \$0        | (\$2,360)        | \$32,567       | 24               | \$497,061.4    | \$0        | (\$33,581)       | \$463,480        |
| 25                          | \$67,989.7     | \$0        | (\$4,460)        | \$63,530       | 25                        | \$35,794.8     | \$0        | (\$2,348)        | \$33,447       | 25               | \$509,413.4    | \$0        | (\$33,413)       | \$476,000        |
| IRR                         |                |            |                  | -1.04%         | IRR                       |                |            |                  | -1.40%         | IRR              |                |            |                  | -0.67%           |
| NPV                         |                |            |                  | (\$897,556.89) | NPV                       |                |            |                  | (\$531,730.75) | NPV              |                |            |                  | (\$5,913,388.30) |
| AROI                        |                |            |                  | 0.24%          | AROI                      |                |            |                  | 0.06%          | AROI             |                |            |                  | 0.43%            |

# IRR, NPV, AROI - PV Solar Energy Systems

## Financial Calculations

Based on inflation of: 3%

O&M inflation: 3%

| Old Mill Elementary School |                |            |                  |                  | Wall Intermediate School |                |            |                  |                  |
|----------------------------|----------------|------------|------------------|------------------|--------------------------|----------------|------------|------------------|------------------|
| Year                       | Energy Savings | SREC Sales | Maintenance Cost | Cash Flow        | Year                     | Energy Savings | SREC Sales | Maintenance Cost | Cash Flow        |
| 0                          |                |            |                  | (\$3,757,816)    | 0                        |                |            |                  | (\$9,812,510)    |
| 1                          | \$56,526.6     | \$113,053  | (\$7,537)        | \$162,043        | 1                        | \$140,688.5    | \$301,475  | (\$20,098)       | \$422,065        |
| 2                          | \$57,931.3     | \$112,488  | (\$7,499)        | \$162,920        | 2                        | \$144,184.6    | \$299,968  | (\$19,998)       | \$424,155        |
| 3                          | \$59,370.9     | \$111,926  | (\$7,462)        | \$163,835        | 3                        | \$147,767.6    | \$298,468  | (\$19,898)       | \$426,338        |
| 4                          | \$60,846.3     | \$111,366  | (\$7,424)        | \$164,788        | 4                        | \$151,439.6    | \$296,976  | (\$19,798)       | \$428,617        |
| 5                          | \$62,358.3     | \$110,809  | (\$7,387)        | \$165,780        | 5                        | \$155,202.9    | \$295,491  | (\$19,699)       | \$430,994        |
| 6                          | \$63,907.9     | \$110,255  | (\$7,350)        | \$166,813        | 6                        | \$159,059.7    | \$294,013  | (\$19,601)       | \$433,472        |
| 7                          | \$65,496.0     | \$109,704  | (\$7,314)        | \$167,886        | 7                        | \$163,012.3    | \$292,543  | (\$19,503)       | \$436,053        |
| 8                          | \$67,123.6     | \$109,155  | (\$7,277)        | \$169,002        | 8                        | \$167,063.2    | \$291,081  | (\$19,405)       | \$438,738        |
| 9                          | \$68,791.6     | \$108,609  | (\$7,241)        | \$170,160        | 9                        | \$171,214.7    | \$289,625  | (\$19,308)       | \$441,532        |
| 10                         | \$70,501.1     | \$108,066  | (\$7,204)        | \$171,363        | 10                       | \$175,469.4    | \$288,177  | (\$19,212)       | \$444,435        |
| 11                         | \$72,253.0     | \$107,526  | (\$7,168)        | \$172,611        | 11                       | \$179,829.8    | \$286,736  | (\$19,116)       | \$447,450        |
| 12                         | \$74,048.5     | \$106,988  | (\$7,133)        | \$173,904        | 12                       | \$184,298.5    | \$285,303  | (\$19,020)       | \$450,581        |
| 13                         | \$75,888.6     | \$106,454  | (\$7,097)        | \$175,245        | 13                       | \$188,878.4    | \$283,876  | (\$18,925)       | \$453,829        |
| 14                         | \$77,774.5     | \$105,921  | (\$7,061)        | \$176,634        | 14                       | \$193,572.0    | \$282,457  | (\$18,830)       | \$457,198        |
| 15                         | \$79,707.2     | \$105,392  | (\$7,026)        | \$178,073        | 15                       | \$198,382.2    | \$281,044  | (\$18,736)       | \$460,690        |
| 16                         | \$81,687.9     | \$0        | (\$6,991)        | \$74,697         | 16                       | \$203,312.0    | \$0        | (\$18,643)       | \$184,669        |
| 17                         | \$83,717.8     | \$0        | (\$6,956)        | \$76,762         | 17                       | \$208,364.4    | \$0        | (\$18,549)       | \$189,815        |
| 18                         | \$85,798.2     | \$0        | (\$6,921)        | \$78,877         | 18                       | \$213,542.2    | \$0        | (\$18,457)       | \$195,086        |
| 19                         | \$87,930.3     | \$0        | (\$6,887)        | \$81,044         | 19                       | \$218,848.7    | \$0        | (\$18,364)       | \$200,484        |
| 20                         | \$90,115.4     | \$0        | (\$6,852)        | \$83,263         | 20                       | \$224,287.1    | \$0        | (\$18,273)       | \$206,015        |
| 21                         | \$92,354.7     | \$0        | (\$6,818)        | \$85,537         | 21                       | \$229,860.7    | \$0        | (\$18,181)       | \$211,679        |
| 22                         | \$94,649.7     | \$0        | (\$6,784)        | \$87,866         | 22                       | \$235,572.7    | \$0        | (\$18,090)       | \$217,482        |
| 23                         | \$97,001.8     | \$0        | (\$6,750)        | \$90,252         | 23                       | \$241,426.7    | \$0        | (\$18,000)       | \$223,427        |
| 24                         | \$99,412.3     | \$0        | (\$6,716)        | \$92,696         | 24                       | \$247,426.1    | \$0        | (\$17,910)       | \$229,516        |
| 25                         | \$101,882.7    | \$0        | (\$6,683)        | \$95,200         | 25                       | \$253,574.7    | \$0        | (\$17,820)       | \$235,754        |
| IRR                        |                |            |                  | -0.90%           | IRR                      |                |            |                  | -1.06%           |
| NPV                        |                |            |                  | (\$1,282,677.66) | NPV                      |                |            |                  | (\$3,441,963.66) |
| AROI                       |                |            |                  | 0.31%            | AROI                     |                |            |                  | 0.30%            |

**Lifetime Savings Analysis - Photovoltaic Solar Energy Systems**

| ECM                                  | Allenwood Elementary School | Central Elementary School | Wall High School       | Old Mill Elementary School | Wall Intermediate School |
|--------------------------------------|-----------------------------|---------------------------|------------------------|----------------------------|--------------------------|
| Assumed Inflation (Gas)              |                             |                           |                        |                            |                          |
| Initial Yearly Savings (Gas)         |                             |                           |                        |                            |                          |
| Assumed Inflation (Electricity)      | 3%                          | 3%                        | 3%                     | 3%                         | 3%                       |
| Initial Yearly Savings (Electricity) | \$37,722.10                 | \$19,859.69               | \$282,633.10           | \$56,526.62                | \$140,688.48             |
| Assumed Average Useful Life (Years)  | 25                          | 25                        | 25                     | 25                         | 25                       |
| <b>Lifetime Savings</b>              | <b>\$1,375,319.95</b>       | <b>\$724,069.55</b>       | <b>\$10,304,595.05</b> | <b>\$2,060,919.01</b>      | <b>\$5,129,398.43</b>    |
| <u>Year</u>                          | <u>Annual Savings</u>       | <u>Annual Savings</u>     | <u>Annual Savings</u>  | <u>Annual Savings</u>      | <u>Annual Savings</u>    |
| 1                                    | \$37,722.10                 | \$19,859.69               | \$282,633.10           | \$56,526.62                | \$140,688.48             |
| 2                                    | \$38,853.76                 | \$20,455.48               | \$291,112.10           | \$58,222.42                | \$144,909.13             |
| 3                                    | \$40,019.37                 | \$21,069.14               | \$299,845.46           | \$59,969.09                | \$149,256.41             |
| 4                                    | \$41,219.96                 | \$21,701.22               | \$308,840.82           | \$61,768.16                | \$153,734.10             |
| 5                                    | \$42,456.55                 | \$22,352.25               | \$318,106.05           | \$63,621.21                | \$158,346.12             |
| 6                                    | \$43,730.25                 | \$23,022.82               | \$327,649.23           | \$65,529.85                | \$163,096.51             |
| 7                                    | \$45,042.16                 | \$23,713.50               | \$337,478.71           | \$67,495.74                | \$167,989.40             |
| 8                                    | \$46,393.42                 | \$24,424.91               | \$347,603.07           | \$69,520.61                | \$173,029.08             |
| 9                                    | \$47,785.23                 | \$25,157.66               | \$358,031.16           | \$71,606.23                | \$178,219.96             |
| 10                                   | \$49,218.78                 | \$25,912.39               | \$368,772.10           | \$73,754.42                | \$183,566.55             |
| 11                                   | \$50,695.35                 | \$26,689.76               | \$379,835.26           | \$75,967.05                | \$189,073.55             |
| 12                                   | \$52,216.21                 | \$27,490.45               | \$391,230.32           | \$78,246.06                | \$194,745.76             |
| 13                                   | \$53,782.69                 | \$28,315.16               | \$402,967.23           | \$80,593.45                | \$200,588.13             |
| 14                                   | \$55,396.17                 | \$29,164.62               | \$415,056.24           | \$83,011.25                | \$206,605.77             |
| 15                                   | \$57,058.06                 | \$30,039.56               | \$427,507.93           | \$85,501.59                | \$212,803.95             |
| 16                                   | \$58,769.80                 | \$30,940.74               | \$440,333.17           | \$88,066.63                | \$219,188.07             |
| 17                                   | \$60,532.89                 | \$31,868.97               | \$453,543.16           | \$90,708.63                | \$225,763.71             |
| 18                                   | \$62,348.88                 | \$32,825.04               | \$467,149.46           | \$93,429.89                | \$232,536.62             |
| 19                                   | \$64,219.35                 | \$33,809.79               | \$481,163.94           | \$96,232.79                | \$239,512.72             |
| 20                                   | \$66,145.93                 | \$34,824.08               | \$495,598.86           | \$99,119.77                | \$246,698.10             |
| 21                                   | \$68,130.31                 | \$35,868.80               | \$510,466.82           | \$102,093.36               | \$254,099.04             |
| 22                                   | \$70,174.21                 | \$36,944.87               | \$525,780.83           | \$105,156.17               | \$261,722.01             |
| 23                                   | \$72,279.44                 | \$38,053.21               | \$541,554.25           | \$108,310.85               | \$269,573.67             |
| 24                                   | \$74,447.82                 | \$39,194.81               | \$557,800.88           | \$111,560.18               | \$277,660.88             |
| 25                                   | \$76,681.26                 | \$40,370.65               | \$574,534.91           | \$114,906.98               | \$285,990.71             |

| ECM                                  | Allenwood Elementary School - Total    | Central Elementary School - Total    | Old Mill Elementary School - Total    | Wall Intermediate School - Total    | Wall High School - Total    |
|--------------------------------------|----------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------|-----------------------------|
| Assumed Inflation (Gas)              | 2%                                     | 2%                                   | 2%                                    | 2%                                  | 2%                          |
| Initial Yearly Savings (Gas)         |                                        |                                      |                                       |                                     |                             |
| Assumed Inflation (Electricity)      | 3%                                     | 3%                                   | 3%                                    | 3%                                  | 3%                          |
| Initial Yearly Savings (Electricity) | \$9,257.32                             | \$8,628.47                           | \$12,308.48                           | \$22,834.61                         | \$33,080.67                 |
| Assumed Average Useful Life (Years)  | 15                                     | 15                                   | 15                                    | 15                                  | 15                          |
| <b>Lifetime Savings</b>              | <b>\$172,176.09</b>                    | <b>\$160,480.19</b>                  | <b>\$228,924.36</b>                   | <b>\$424,698.99</b>                 | <b>\$615,264.55</b>         |
| <u>Year</u>                          | <u>Annual Savings</u>                  | <u>Annual Savings</u>                | <u>Annual Savings</u>                 | <u>Annual Savings</u>               | <u>Annual Savings</u>       |
| 1                                    | \$9,257.32                             | \$8,628.47                           | \$12,308.48                           | \$22,834.61                         | \$33,080.67                 |
| 2                                    | \$9,535.04                             | \$8,887.33                           | \$12,677.73                           | \$23,519.65                         | \$34,073.09                 |
| 3                                    | \$9,821.09                             | \$9,153.95                           | \$13,058.07                           | \$24,225.24                         | \$35,095.28                 |
| 4                                    | \$10,115.72                            | \$9,428.56                           | \$13,449.81                           | \$24,952.00                         | \$36,148.14                 |
| 5                                    | \$10,419.19                            | \$9,711.42                           | \$13,853.30                           | \$25,700.56                         | \$37,232.59                 |
| 6                                    | \$10,731.77                            | \$10,002.76                          | \$14,268.90                           | \$26,471.57                         | \$38,349.56                 |
| 7                                    | \$11,053.72                            | \$10,302.85                          | \$14,696.97                           | \$27,265.72                         | \$39,500.05                 |
| 8                                    | \$11,385.34                            | \$10,611.93                          | \$15,137.88                           | \$28,083.69                         | \$40,685.05                 |
| 9                                    | \$11,726.90                            | \$10,930.29                          | \$15,592.01                           | \$28,926.20                         | \$41,905.60                 |
| 10                                   | \$12,078.70                            | \$11,258.20                          | \$16,059.77                           | \$29,793.99                         | \$43,162.77                 |
| 11                                   | \$12,441.06                            | \$11,595.94                          | \$16,541.57                           | \$30,687.81                         | \$44,457.66                 |
| 12                                   | \$12,814.30                            | \$11,943.82                          | \$17,037.81                           | \$31,608.44                         | \$45,791.39                 |
| 13                                   | \$13,198.72                            | \$12,302.14                          | \$17,548.95                           | \$32,556.70                         | \$47,165.13                 |
| 14                                   | \$13,594.69                            | \$12,671.20                          | \$18,075.42                           | \$33,533.40                         | \$48,580.08                 |
| 15                                   | \$14,002.53                            | \$13,051.34                          | \$18,617.68                           | \$34,539.40                         | \$50,037.48                 |
| ECM                                  | Allenwood Elementary School - Interior | Central Elementary School - Interior | Old Mill Elementary School - Interior | Wall Intermediate School - Interior | Wall High School - Interior |
| Assumed Inflation (Gas)              | 2%                                     | 2%                                   | 2%                                    | 2%                                  | 2%                          |
| Initial Yearly Savings (Gas)         |                                        |                                      |                                       |                                     |                             |
| Assumed Inflation (Electricity)      | 3%                                     | 3%                                   | 3%                                    | 3%                                  | 3%                          |
| Initial Yearly Savings (Electricity) | \$8,271.79                             | \$8,379.00                           | \$11,099.43                           | \$19,459.02                         | \$31,376.31                 |
| Assumed Average Useful Life (Years)  | 15                                     | 15                                   | 15                                    | 15                                  | 15                          |
| <b>Lifetime Savings</b>              | <b>\$153,846.38</b>                    | <b>\$155,840.32</b>                  | <b>\$206,437.27</b>                   | <b>\$361,916.67</b>                 | <b>\$583,565.35</b>         |
| <u>Year</u>                          | <u>Annual Savings</u>                  | <u>Annual Savings</u>                | <u>Annual Savings</u>                 | <u>Annual Savings</u>               | <u>Annual Savings</u>       |
| 1                                    | \$8,271.79                             | \$8,379.00                           | \$11,099.43                           | \$19,459.02                         | \$31,376.31                 |
| 2                                    | \$8,519.95                             | \$8,630.37                           | \$11,432.41                           | \$20,042.79                         | \$32,317.60                 |
| 3                                    | \$8,775.55                             | \$8,889.28                           | \$11,775.38                           | \$20,644.08                         | \$33,287.13                 |
| 4                                    | \$9,038.81                             | \$9,155.96                           | \$12,128.64                           | \$21,263.40                         | \$34,285.74                 |
| 5                                    | \$9,309.98                             | \$9,430.64                           | \$12,492.50                           | \$21,901.30                         | \$35,314.32                 |
| 6                                    | \$9,589.28                             | \$9,713.56                           | \$12,867.28                           | \$22,558.34                         | \$36,373.75                 |
| 7                                    | \$9,876.95                             | \$10,004.97                          | \$13,253.29                           | \$23,235.09                         | \$37,464.96                 |
| 8                                    | \$10,173.26                            | \$10,305.11                          | \$13,650.89                           | \$23,932.14                         | \$38,588.91                 |
| 9                                    | \$10,478.46                            | \$10,614.27                          | \$14,060.42                           | \$24,650.11                         | \$39,746.57                 |
| 10                                   | \$10,792.81                            | \$10,932.70                          | \$14,482.23                           | \$25,389.61                         | \$40,938.97                 |
| 11                                   | \$11,116.60                            | \$11,260.68                          | \$14,916.70                           | \$26,151.30                         | \$42,167.14                 |
| 12                                   | \$11,450.10                            | \$11,598.50                          | \$15,364.20                           | \$26,935.84                         | \$43,432.16                 |
| 13                                   | \$11,793.60                            | \$11,946.45                          | \$15,825.13                           | \$27,743.91                         | \$44,735.12                 |
| 14                                   | \$12,147.41                            | \$12,304.85                          | \$16,299.88                           | \$28,576.23                         | \$46,077.17                 |
| 15                                   | \$12,511.83                            | \$12,673.99                          | \$16,788.88                           | \$29,433.52                         | \$47,459.49                 |

| ECM                                  | Allenwood Elementary School - Exterior | Central Elementary School - Exterior | Old Mill Elementary School - Exterior | Wall Intermediate School - Exterior | Wall High School - Exterior |
|--------------------------------------|----------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------|-----------------------------|
| Assumed Inflation (Gas)              | 2%                                     | 2%                                   | 2%                                    | 2%                                  | 2%                          |
| Initial Yearly Savings (Gas)         |                                        |                                      |                                       |                                     |                             |
| Assumed Inflation (Electricity)      | 3%                                     | 3%                                   | 3%                                    | 3%                                  | 3%                          |
| Initial Yearly Savings (Electricity) | \$985.53                               | \$249.47                             | \$1,209.05                            | \$3,375.59                          | \$1,704.36                  |
| Assumed Average Useful Life (Years)  | 15                                     | 15                                   | 15                                    | 15                                  | 15                          |
| <b>Lifetime Savings</b>              | <b>\$18,329.72</b>                     | <b>\$4,639.87</b>                    | <b>\$22,487.09</b>                    | <b>\$62,782.32</b>                  | <b>\$31,699.20</b>          |
| <u>Year</u>                          | <u>Annual Savings</u>                  | <u>Annual Savings</u>                | <u>Annual Savings</u>                 | <u>Annual Savings</u>               | <u>Annual Savings</u>       |
| 1                                    | \$985.53                               | \$249.47                             | \$1,209.05                            | \$3,375.59                          | \$1,704.36                  |
| 2                                    | \$1,015.09                             | \$256.95                             | \$1,245.33                            | \$3,476.86                          | \$1,755.49                  |
| 3                                    | \$1,045.54                             | \$264.66                             | \$1,282.69                            | \$3,581.16                          | \$1,808.15                  |
| 4                                    | \$1,076.91                             | \$272.60                             | \$1,321.17                            | \$3,688.60                          | \$1,862.40                  |
| 5                                    | \$1,109.22                             | \$280.78                             | \$1,360.80                            | \$3,799.26                          | \$1,918.27                  |
| 6                                    | \$1,142.49                             | \$289.20                             | \$1,401.62                            | \$3,913.23                          | \$1,975.82                  |
| 7                                    | \$1,176.77                             | \$297.88                             | \$1,443.67                            | \$4,030.63                          | \$2,035.09                  |
| 8                                    | \$1,212.07                             | \$306.82                             | \$1,486.98                            | \$4,151.55                          | \$2,096.15                  |
| 9                                    | \$1,248.43                             | \$316.02                             | \$1,531.59                            | \$4,276.10                          | \$2,159.03                  |
| 10                                   | \$1,285.89                             | \$325.50                             | \$1,577.54                            | \$4,404.38                          | \$2,223.80                  |
| 11                                   | \$1,324.46                             | \$335.27                             | \$1,624.87                            | \$4,536.51                          | \$2,290.51                  |
| 12                                   | \$1,364.20                             | \$345.32                             | \$1,673.61                            | \$4,672.61                          | \$2,359.23                  |
| 13                                   | \$1,405.12                             | \$355.68                             | \$1,723.82                            | \$4,812.78                          | \$2,430.01                  |
| 14                                   | \$1,447.28                             | \$366.35                             | \$1,775.54                            | \$4,957.17                          | \$2,502.91                  |
| 15                                   | \$1,490.70                             | \$377.35                             | \$1,828.80                            | \$5,105.88                          | \$2,577.99                  |

IRR, NPV, AROI

Inflation Rate: 3%

| Lighting Upgrades<br>Allenwood Elementary School - Total    |                      | Lighting Upgrades<br>Central Elementary School - Total    |                      | Lighting Upgrades<br>Old Mill Elementary School - Total    |                      | Lighting Upgrades<br>Wall Intermediate School - Total    |                      | Lighting Upgrades<br>Wall High School - Total    |                      |
|-------------------------------------------------------------|----------------------|-----------------------------------------------------------|----------------------|------------------------------------------------------------|----------------------|----------------------------------------------------------|----------------------|--------------------------------------------------|----------------------|
| Life of ECRM (Yrs): 15                                      |                      | Life of ECRM (Yrs): 15                                    |                      | Life of ECRM (Yrs): 15                                     |                      | Life of ECRM (Yrs): 15                                   |                      | Life of ECRM (Yrs): 15                           |                      |
| Year                                                        | Cash Flow            | Year                                                      | Cash Flow            | Year                                                       | Cash Flow            | Year                                                     | Cash Flow            | Year                                             | Cash Flow            |
| 0                                                           | <b>(\$30,267.23)</b> | 0                                                         | <b>(\$19,188.08)</b> | 0                                                          | <b>(\$24,981.31)</b> | 0                                                        | <b>(\$68,482.70)</b> | 0                                                | <b>(\$63,214.63)</b> |
| 1                                                           | <b>\$9,054.09</b>    | 1                                                         | <b>\$8,050.36</b>    | 1                                                          | <b>\$12,018.32</b>   | 1                                                        | <b>\$20,443.99</b>   | 1                                                | <b>\$29,293.71</b>   |
| 2                                                           | \$9,325.71           | 2                                                         | \$8,291.87           | 2                                                          | \$12,378.87          | 2                                                        | \$21,057.31          | 2                                                | \$30,172.52          |
| 3                                                           | \$9,605.48           | 3                                                         | \$8,540.63           | 3                                                          | \$12,750.24          | 3                                                        | \$21,689.03          | 3                                                | \$31,077.70          |
| 4                                                           | \$9,893.65           | 4                                                         | \$8,796.85           | 4                                                          | \$13,132.74          | 4                                                        | \$22,339.70          | 4                                                | \$32,010.03          |
| 5                                                           | \$10,190.46          | 5                                                         | \$9,060.75           | 5                                                          | \$13,526.72          | 5                                                        | \$23,009.89          | 5                                                | \$32,970.33          |
| 6                                                           | \$10,496.17          | 6                                                         | \$9,332.57           | 6                                                          | \$13,932.53          | 6                                                        | \$23,700.19          | 6                                                | \$33,959.44          |
| 7                                                           | \$10,811.06          | 7                                                         | \$9,612.55           | 7                                                          | \$14,350.50          | 7                                                        | \$24,411.20          | 7                                                | \$34,978.22          |
| 8                                                           | \$11,135.39          | 8                                                         | \$9,900.93           | 8                                                          | \$14,781.02          | 8                                                        | \$25,143.53          | 8                                                | \$36,027.57          |
| 9                                                           | \$11,469.45          | 9                                                         | \$10,197.96          | 9                                                          | \$15,224.45          | 9                                                        | \$25,897.84          | 9                                                | \$37,108.40          |
| 10                                                          | \$11,813.53          | 10                                                        | \$10,503.90          | 10                                                         | \$15,681.18          | 10                                                       | \$26,674.77          | 10                                               | \$38,221.65          |
| 11                                                          | \$12,167.94          | 11                                                        | \$10,819.01          | 11                                                         | \$16,151.62          | 11                                                       | \$27,475.02          | 11                                               | \$39,368.30          |
| 12                                                          | \$12,532.98          | 12                                                        | \$11,143.58          | 12                                                         | \$16,636.17          | 12                                                       | \$28,299.27          | 12                                               | \$40,549.35          |
| 13                                                          | \$12,908.97          | 13                                                        | \$11,477.89          | 13                                                         | \$17,135.25          | 13                                                       | \$29,148.24          | 13                                               | \$41,765.83          |
| 14                                                          | \$13,296.24          | 14                                                        | \$11,822.23          | 14                                                         | \$17,649.31          | 14                                                       | \$30,022.69          | 14                                               | \$43,018.80          |
| 15                                                          | \$13,695.12          | 15                                                        | \$12,176.89          | 15                                                         | \$18,178.79          | 15                                                       | \$30,923.37          | 15                                               | \$44,309.37          |
| IRR                                                         | 32.21%               | IRR                                                       | 44.70%               | IRR                                                        | 50.95%               | IRR                                                      | 32.14%               | IRR                                              | 49.16%               |
| NPV                                                         | \$101,588.44         | NPV                                                       | \$98,050.19          | NPV                                                        | \$150,042.76         | NPV                                                      | \$229,245.34         | NPV                                              | \$363,392.81         |
| AROI                                                        | 23.25%               | AROI                                                      | 35.29%               | AROI                                                       | 41.44%               | AROI                                                     | 23.19%               | AROI                                             | 39.67%               |
| Lighting Upgrades<br>Allenwood Elementary School - Interior |                      | Lighting Upgrades<br>Central Elementary School - Interior |                      | Lighting Upgrades<br>Old Mill Elementary School - Interior |                      | Lighting Upgrades<br>Wall Intermediate School - Interior |                      | Lighting Upgrades<br>Wall High School - Interior |                      |
| Life of ECRM (Yrs): 15                                      |                      | Life of ECRM (Yrs): 15                                    |                      | Life of ECRM (Yrs): 15                                     |                      | Life of ECRM (Yrs): 15                                   |                      | Life of ECRM (Yrs): 15                           |                      |
| Year                                                        | Cash Flow            | Year                                                      | Cash Flow            | Year                                                       | Cash Flow            | Year                                                     | Cash Flow            | Year                                             | Cash Flow            |
| 0                                                           | <b>(\$22,710.53)</b> | 0                                                         | <b>(\$15,328.95)</b> | 0                                                          | <b>(\$22,651.06)</b> | 0                                                        | <b>(\$37,350.95)</b> | 0                                                | <b>(\$49,093.16)</b> |
| 1                                                           | <b>\$8,004.57</b>    | 1                                                         | <b>\$7,800.89</b>    | 1                                                          | <b>\$10,809.27</b>   | 1                                                        | <b>\$17,068.40</b>   | 1                                                | <b>\$27,418.71</b>   |
| 2                                                           | \$8,244.71           | 2                                                         | \$8,034.92           | 2                                                          | \$11,133.54          | 2                                                        | \$17,580.45          | 2                                                | \$28,241.27          |
| 3                                                           | \$8,492.05           | 3                                                         | \$8,275.97           | 3                                                          | \$11,467.55          | 3                                                        | \$18,107.87          | 3                                                | \$29,088.51          |
| 4                                                           | \$8,746.81           | 4                                                         | \$8,524.24           | 4                                                          | \$11,811.58          | 4                                                        | \$18,651.10          | 4                                                | \$29,961.17          |
| 5                                                           | \$9,009.22           | 5                                                         | \$8,779.97           | 5                                                          | \$12,165.92          | 5                                                        | \$19,210.64          | 5                                                | \$30,860.00          |
| 6                                                           | \$9,279.49           | 6                                                         | \$9,043.37           | 6                                                          | \$12,530.90          | 6                                                        | \$19,786.96          | 6                                                | \$31,785.80          |
| 7                                                           | \$9,557.88           | 7                                                         | \$9,314.67           | 7                                                          | \$12,906.83          | 7                                                        | \$20,380.56          | 7                                                | \$32,739.38          |
| 8                                                           | \$9,844.62           | 8                                                         | \$9,594.11           | 8                                                          | \$13,294.03          | 8                                                        | \$20,991.98          | 8                                                | \$33,721.56          |
| 9                                                           | \$10,139.95          | 9                                                         | \$9,881.94           | 9                                                          | \$13,692.85          | 9                                                        | \$21,621.74          | 9                                                | \$34,733.21          |
| 10                                                          | \$10,444.15          | 10                                                        | \$10,178.39          | 10                                                         | \$14,103.64          | 10                                                       | \$22,270.39          | 10                                               | \$35,775.20          |
| 11                                                          | \$10,757.48          | 11                                                        | \$10,483.75          | 11                                                         | \$14,526.75          | 11                                                       | \$22,938.50          | 11                                               | \$36,848.46          |
| 12                                                          | \$11,080.20          | 12                                                        | \$10,798.26          | 12                                                         | \$14,962.55          | 12                                                       | \$23,626.66          | 12                                               | \$37,953.91          |
| 13                                                          | \$11,412.61          | 13                                                        | \$11,122.21          | 13                                                         | \$15,411.43          | 13                                                       | \$24,335.46          | 13                                               | \$39,092.53          |
| 14                                                          | \$11,754.99          | 14                                                        | \$11,455.87          | 14                                                         | \$15,873.77          | 14                                                       | \$25,065.52          | 14                                               | \$40,265.30          |
| 15                                                          | \$12,107.64          | 15                                                        | \$11,799.55          | 15                                                         | \$16,349.98          | 15                                                       | \$25,817.49          | 15                                               | \$41,473.26          |
| IRR                                                         | 37.80%               | IRR                                                       | 53.77%               | IRR                                                        | 50.56%               | IRR                                                      | 48.51%               | IRR                                              | 58.77%               |
| NPV                                                         | \$93,860.93          | NPV                                                       | \$98,276.26          | NPV                                                        | \$134,765.43         | NPV                                                      | \$211,218.01         | NPV                                              | \$350,208.49         |
| AROI                                                        | 28.58%               | AROI                                                      | 44.22%               | AROI                                                       | 41.05%               | AROI                                                     | 39.03%               | AROI                                             | 49.18%               |
| Lighting Upgrades<br>Allenwood Elementary School - Exterior |                      | Lighting Upgrades<br>Central Elementary School - Exterior |                      | Lighting Upgrades<br>Old Mill Elementary School - Exterior |                      | Lighting Upgrades<br>Wall Intermediate School - Exterior |                      | Lighting Upgrades<br>Wall High School - Exterior |                      |
| Life of ECRM (Yrs): 15                                      |                      | Life of ECRM (Yrs): 15                                    |                      | Life of ECRM (Yrs): 15                                     |                      | Life of ECRM (Yrs): 15                                   |                      | Life of ECRM (Yrs): 15                           |                      |
| Year                                                        | Cash Flow            | Year                                                      | Cash Flow            | Year                                                       | Cash Flow            | Year                                                     | Cash Flow            | Year                                             | Cash Flow            |
| 0                                                           | <b>(\$7,556.70)</b>  | 0                                                         | <b>(\$3,859.13)</b>  | 0                                                          | <b>(\$2,330.25)</b>  | 0                                                        | <b>(\$31,131.75)</b> | 0                                                | <b>(\$14,121.47)</b> |
| 1                                                           | <b>\$1,049.52</b>    | 1                                                         | <b>\$249.47</b>      | 1                                                          | <b>\$1,209.05</b>    | 1                                                        | <b>\$3,375.59</b>    | 1                                                | <b>\$1,875.00</b>    |
| 2                                                           | \$1,081.00           | 2                                                         | \$256.95             | 2                                                          | \$1,245.33           | 2                                                        | \$3,476.86           | 2                                                | \$1,931.25           |
| 3                                                           | \$1,113.43           | 3                                                         | \$264.66             | 3                                                          | \$1,282.69           | 3                                                        | \$3,581.16           | 3                                                | \$1,989.19           |
| 4                                                           | \$1,146.83           | 4                                                         | \$272.60             | 4                                                          | \$1,321.17           | 4                                                        | \$3,688.60           | 4                                                | \$2,048.86           |
| 5                                                           | \$1,181.24           | 5                                                         | \$280.78             | 5                                                          | \$1,360.80           | 5                                                        | \$3,799.26           | 5                                                | \$2,110.33           |
| 6                                                           | \$1,216.68           | 6                                                         | \$289.20             | 6                                                          | \$1,401.62           | 6                                                        | \$3,913.23           | 6                                                | \$2,173.64           |
| 7                                                           | \$1,253.18           | 7                                                         | \$297.88             | 7                                                          | \$1,443.67           | 7                                                        | \$4,030.63           | 7                                                | \$2,238.85           |
| 8                                                           | \$1,290.77           | 8                                                         | \$306.82             | 8                                                          | \$1,486.98           | 8                                                        | \$4,151.55           | 8                                                | \$2,306.01           |
| 9                                                           | \$1,329.50           | 9                                                         | \$316.02             | 9                                                          | \$1,531.59           | 9                                                        | \$4,276.10           | 9                                                | \$2,375.19           |
| 10                                                          | \$1,369.38           | 10                                                        | \$325.50             | 10                                                         | \$1,577.54           | 10                                                       | \$4,404.38           | 10                                               | \$2,446.45           |
| 11                                                          | \$1,410.46           | 11                                                        | \$335.27             | 11                                                         | \$1,624.87           | 11                                                       | \$4,536.51           | 11                                               | \$2,519.84           |
| 12                                                          | \$1,452.78           | 12                                                        | \$345.32             | 12                                                         | \$1,673.61           | 12                                                       | \$4,672.61           | 12                                               | \$2,595.44           |
| 13                                                          | \$1,496.36           | 13                                                        | \$355.68             | 13                                                         | \$1,723.82           | 13                                                       | \$4,812.78           | 13                                               | \$2,673.30           |
| 14                                                          | \$1,541.25           | 14                                                        | \$366.35             | 14                                                         | \$1,775.54           | 14                                                       | \$4,957.17           | 14                                               | \$2,753.50           |
| 15                                                          | \$1,587.49           | 15                                                        | \$377.35             | 15                                                         | \$1,828.80           | 15                                                       | \$5,105.88           | 15                                               | \$2,836.10           |
| IRR                                                         | 13.76%               | IRR                                                       | 2.23%                | IRR                                                        | 54.77%               | IRR                                                      | 9.53%                | IRR                                              | 12.95%               |
| NPV                                                         | \$7,727.51           | NPV                                                       | <b>(\$226.07)</b>    | NPV                                                        | \$15,277.33          | NPV                                                      | \$18,027.33          | NPV                                              | \$13,184.32          |
| AROI                                                        | 7.22%                | AROI                                                      | -0.20%               | AROI                                                       | 45.22%               | AROI                                                     | 4.18%                | AROI                                             | 6.61%                |

| ECM                                  | Wall Township Board of<br>Education - Minimum Wind<br>Speed | Wall Township Board of<br>Education - Maximum Wind<br>Speed | Wall Township Board of<br>Education - Average Wind<br>Speed |
|--------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| Assumed Inflation (Gas)              |                                                             |                                                             |                                                             |
| Initial Yearly Savings (Gas)         |                                                             |                                                             |                                                             |
| Assumed Inflation (Electricity)      | 3%                                                          | 3%                                                          | 3%                                                          |
| Initial Yearly Savings (Electricity) | \$11,693.10                                                 | \$23,726.85                                                 | \$18,694.20                                                 |
| Assumed Average Useful Life (Years)  | 25                                                          | 25                                                          | 25                                                          |
| <b>Lifetime Savings</b>              | <b>\$426,321.82</b>                                         | <b>\$865,063.50</b>                                         | <b>\$681,576.78</b>                                         |
| <u>Year</u>                          | <u>Annual Savings</u>                                       | <u>Annual Savings</u>                                       | <u>Annual Savings</u>                                       |
| 1                                    | \$11,693.10                                                 | \$23,726.85                                                 | \$18,694.20                                                 |
| 2                                    | \$12,043.89                                                 | \$24,438.66                                                 | \$19,255.03                                                 |
| 3                                    | \$12,405.21                                                 | \$25,171.82                                                 | \$19,832.68                                                 |
| 4                                    | \$12,777.37                                                 | \$25,926.97                                                 | \$20,427.66                                                 |
| 5                                    | \$13,160.69                                                 | \$26,704.78                                                 | \$21,040.49                                                 |
| 6                                    | \$13,555.51                                                 | \$27,505.92                                                 | \$21,671.70                                                 |
| 7                                    | \$13,962.17                                                 | \$28,331.10                                                 | \$22,321.85                                                 |
| 8                                    | \$14,381.04                                                 | \$29,181.03                                                 | \$22,991.51                                                 |
| 9                                    | \$14,812.47                                                 | \$30,056.46                                                 | \$23,681.25                                                 |
| 10                                   | \$15,256.84                                                 | \$30,958.16                                                 | \$24,391.69                                                 |
| 11                                   | \$15,714.55                                                 | \$31,886.90                                                 | \$25,123.44                                                 |
| 12                                   | \$16,185.99                                                 | \$32,843.51                                                 | \$25,877.14                                                 |
| 13                                   | \$16,671.56                                                 | \$33,828.81                                                 | \$26,653.46                                                 |
| 14                                   | \$17,171.71                                                 | \$34,843.68                                                 | \$27,453.06                                                 |
| 15                                   | \$17,686.86                                                 | \$35,888.99                                                 | \$28,276.65                                                 |
| 16                                   | \$18,217.47                                                 | \$36,965.66                                                 | \$29,124.95                                                 |
| 17                                   | \$18,763.99                                                 | \$38,074.63                                                 | \$29,998.70                                                 |
| 18                                   | \$19,326.91                                                 | \$39,216.87                                                 | \$30,898.66                                                 |
| 19                                   | \$19,906.72                                                 | \$40,393.37                                                 | \$31,825.62                                                 |
| 20                                   | \$20,503.92                                                 | \$41,605.18                                                 | \$32,780.39                                                 |
| 21                                   | \$21,119.04                                                 | \$42,853.33                                                 | \$33,763.80                                                 |
| 22                                   | \$21,752.61                                                 | \$44,138.93                                                 | \$34,776.72                                                 |
| 23                                   | \$22,405.19                                                 | \$45,463.10                                                 | \$35,820.02                                                 |
| 24                                   | \$23,077.34                                                 | \$46,826.99                                                 | \$36,894.62                                                 |
| 25                                   | \$23,769.66                                                 | \$48,231.80                                                 | \$38,001.46                                                 |



| ECM                                  | Allenwood<br>Condensing Boiler | Old Mill<br>Condensing Boiler | Central<br>Steam Boiler | Intermediate<br>Condensing Boiler | High School<br>Steam Boiler |
|--------------------------------------|--------------------------------|-------------------------------|-------------------------|-----------------------------------|-----------------------------|
| Assumed Inflation (Gas, Oil)         | 2%                             | 2%                            | 2%                      | 2%                                | 2%                          |
| Initial Yearly Savings (Gas, Oil)    | \$4,979.17                     | \$23,043.60                   | \$4,490.47              | \$25,020.00                       | \$9,480.00                  |
| Assumed Inflation (Electricity)      | 3%                             | 3%                            | 3%                      | 3%                                | 3%                          |
| Initial Yearly Savings (Electricity) | \$0.00                         | \$0.00                        | \$0.00                  | \$0.00                            | \$0.00                      |
| Annual Maintenance Cost Savings      | -\$1,500.00                    | \$0.00                        | -\$1,500.00             | -\$1,500.00                       | \$0.00                      |
| Assumed Average Useful Life (Years)  | 24                             | 24                            | 24                      | 24                                | 24                          |
| <b>Lifetime Savings</b>              | <b>\$115,475.62</b>            | <b>\$701,029.23</b>           | <b>\$77,655.57</b>      | <b>\$508,736.06</b>               | <b>\$288,399.26</b>         |
| <u>Year</u>                          | <u>Annual Savings</u>          | <u>Annual Savings</u>         | <u>Annual Savings</u>   | <u>Annual Savings</u>             | <u>Annual Savings</u>       |
| 1                                    | \$3,479.17                     | \$23,043.60                   | \$4,490.47              | \$23,520.00                       | \$9,480.00                  |
| 2                                    | \$3,578.75                     | \$23,504.47                   | \$4,580.28              | \$24,020.40                       | \$9,669.60                  |
| 3                                    | \$3,680.33                     | \$23,974.56                   | \$4,671.88              | \$24,530.81                       | \$9,862.99                  |
| 4                                    | \$3,783.94                     | \$24,454.05                   | \$4,765.32              | \$25,051.42                       | \$10,060.25                 |
| 5                                    | \$3,889.61                     | \$24,943.13                   | \$4,860.63              | \$25,582.45                       | \$10,261.46                 |
| 6                                    | \$3,997.41                     | \$25,442.00                   | \$4,957.84              | \$26,124.10                       | \$10,466.69                 |
| 7                                    | \$4,107.35                     | \$25,950.84                   | \$5,057.00              | \$26,676.58                       | \$10,676.02                 |
| 8                                    | \$4,219.50                     | \$26,469.85                   | \$5,158.14              | \$27,240.12                       | \$10,889.54                 |
| 9                                    | \$4,333.89                     | \$26,999.25                   | \$5,261.30              | \$27,814.92                       | \$11,107.33                 |
| 10                                   | \$4,450.57                     | \$27,539.24                   | \$5,366.53              | \$28,401.22                       | \$11,329.48                 |
| 11                                   | \$4,569.58                     | \$28,090.02                   | \$5,473.86              | \$28,999.24                       | \$11,556.07                 |
| 12                                   | \$4,690.97                     | \$28,651.82                   | \$5,583.34              | \$29,609.23                       | \$11,787.19                 |
| 13                                   | \$4,814.79                     | \$29,224.86                   | \$5,695.00              | \$30,231.41                       | \$12,022.93                 |
| 14                                   | \$4,941.09                     | \$29,809.35                   | \$5,808.90              | \$30,866.04                       | \$12,263.39                 |
| 15                                   | \$5,069.91                     | \$30,405.54                   | \$5,925.08              | \$31,513.36                       | \$12,508.66                 |
| 16                                   | \$5,201.31                     | \$31,013.65                   | \$6,043.58              | \$32,173.63                       | \$12,758.83                 |
| 17                                   | \$5,335.33                     | \$31,633.92                   | \$6,164.45              | \$32,847.10                       | \$13,014.01                 |
| 18                                   | \$5,472.04                     | \$32,266.60                   | \$6,287.74              | \$33,534.04                       | \$13,274.29                 |
| 19                                   | \$5,611.48                     | \$32,911.94                   | \$6,413.50              | \$34,234.72                       | \$13,539.77                 |
| 20                                   | \$5,753.71                     | \$33,570.17                   | \$6,541.77              | \$34,949.42                       | \$13,810.57                 |
| 21                                   | \$5,898.78                     | \$34,241.58                   | \$6,672.60              | \$35,678.40                       | \$14,086.78                 |
| 22                                   | \$6,046.76                     | \$34,926.41                   | \$6,806.05              | \$36,421.97                       | \$14,368.52                 |
| 23                                   | \$6,197.70                     | \$35,624.94                   | \$6,942.18              | \$37,180.41                       | \$14,655.89                 |
| 24                                   | \$6,351.65                     | \$36,337.44                   | \$7,081.02              | \$37,954.02                       | \$14,949.01                 |

IRR, NPV, AROI - HVAC ECRMS

| Allenwood<br>Condensing Boiler |                | Old Mill<br>Condensing Boiler |                | Central<br>Steam Boiler |                | Intermediate<br>Condensing Boiler |                | High School<br>Steam Boiler |                |
|--------------------------------|----------------|-------------------------------|----------------|-------------------------|----------------|-----------------------------------|----------------|-----------------------------|----------------|
| Year                           | Cash Flow      | Year                          | Cash Flow      | Year                    | Cash Flow      | Year                              | Cash Flow      | Year                        | Cash Flow      |
| 0                              | (\$183,500.00) | 0                             | (\$183,500.00) | 0                       | (\$136,228.00) | 0                                 | (\$183,500.00) | 0                           | (\$199,500.00) |
| 1                              | \$3,479.17     | 1                             | \$23,043.60    | 1                       | \$4,490.47     | 1                                 | \$23,520.00    | 1                           | \$9,480.00     |
| 2                              | \$3,578.75     | 2                             | \$23,504.47    | 2                       | \$4,580.28     | 2                                 | \$24,020.40    | 2                           | \$9,669.60     |
| 3                              | \$3,680.33     | 3                             | \$23,974.56    | 3                       | \$4,671.88     | 3                                 | \$24,530.81    | 3                           | \$9,862.99     |
| 4                              | \$3,783.94     | 4                             | \$24,454.05    | 4                       | \$4,765.32     | 4                                 | \$25,051.42    | 4                           | \$10,060.25    |
| 5                              | \$3,889.61     | 5                             | \$24,943.13    | 5                       | \$4,860.63     | 5                                 | \$25,582.45    | 5                           | \$10,261.46    |
| 6                              | \$3,997.41     | 6                             | \$25,442.00    | 6                       | \$4,957.84     | 6                                 | \$26,124.10    | 6                           | \$10,466.69    |
| 7                              | \$4,107.35     | 7                             | \$25,950.84    | 7                       | \$5,057.00     | 7                                 | \$26,676.58    | 7                           | \$10,676.02    |
| 8                              | \$4,219.50     | 8                             | \$26,469.85    | 8                       | \$5,158.14     | 8                                 | \$27,240.12    | 8                           | \$10,889.54    |
| 9                              | \$4,333.89     | 9                             | \$26,999.25    | 9                       | \$5,261.30     | 9                                 | \$27,814.92    | 9                           | \$11,107.33    |
| 10                             | \$4,450.57     | 10                            | \$27,539.24    | 10                      | \$5,366.53     | 10                                | \$28,401.22    | 10                          | \$11,329.48    |
| 11                             | \$4,569.58     | 11                            | \$28,090.02    | 11                      | \$5,473.86     | 11                                | \$28,999.24    | 11                          | \$11,556.07    |
| 12                             | \$4,690.97     | 12                            | \$28,651.82    | 12                      | \$5,583.34     | 12                                | \$29,609.23    | 12                          | \$11,787.19    |
| 13                             | \$4,814.79     | 13                            | \$29,224.86    | 13                      | \$5,695.00     | 13                                | \$30,231.41    | 13                          | \$12,022.93    |
| 14                             | \$4,941.09     | 14                            | \$29,809.35    | 14                      | \$5,808.90     | 14                                | \$30,866.04    | 14                          | \$12,263.39    |
| 15                             | \$5,069.91     | 15                            | \$30,405.54    | 15                      | \$5,925.08     | 15                                | \$31,513.36    | 15                          | \$12,508.66    |
| 16                             | \$5,201.31     | 16                            | \$31,013.65    | 16                      | \$6,043.58     | 16                                | \$32,173.63    | 16                          | \$12,758.83    |
| 17                             | \$5,335.33     | 17                            | \$31,633.92    | 17                      | \$6,164.45     | 17                                | \$32,847.10    | 17                          | \$13,014.01    |
| 18                             | \$5,472.04     | 18                            | \$32,266.60    | 18                      | \$6,287.74     | 18                                | \$33,534.04    | 18                          | \$13,274.29    |
| 19                             | \$5,611.48     | 19                            | \$32,911.94    | 19                      | \$6,413.50     | 19                                | \$34,234.72    | 19                          | \$13,539.77    |
| 20                             | \$5,753.71     | 20                            | \$33,570.17    | 20                      | \$6,541.77     | 20                                | \$34,949.42    | 20                          | \$13,810.57    |
| 21                             | \$5,898.78     | 21                            | \$34,241.58    | 21                      | \$6,672.60     | 21                                | \$35,678.40    | 21                          | \$14,086.78    |
| 22                             | \$6,046.76     | 22                            | \$34,926.41    | 22                      | \$6,806.05     | 22                                | \$36,421.97    | 22                          | \$14,368.52    |
| 23                             | \$6,197.70     | 23                            | \$35,624.94    | 23                      | \$6,942.18     | 23                                | \$37,180.41    | 23                          | \$14,655.89    |
| 24                             | \$6,351.65     | 24                            | \$36,337.44    | 24                      | \$7,081.02     | 24                                | \$37,954.02    | 24                          | \$14,949.01    |
| IRR                            | -3.15%         | IRR                           | 11.05%         | IRR                     | -6.09%         | IRR                               | 14.02%         | IRR                         | 2.93%          |
| NPV                            | (\$104,960.42) | NPV                           | \$130,211.72   | NPV                     | (\$75,095.49)  | NPV                               | \$313,402.83   | NPV                         | (\$1,599.83)   |
| AROI                           | -2.27%         | AROI                          | 5.89%          | AROI                    | -3.37%         | AROI                              | 8.65%          | AROI                        | 0.59%          |

| ECM                                  | Allenwood<br>Window Upgrade | Old Mill<br>Window Upgrade | Intermediate<br>Window Upgrade | High School<br>Window Upgrade |
|--------------------------------------|-----------------------------|----------------------------|--------------------------------|-------------------------------|
| Assumed Inflation (Gas, Oil)         | 2%                          | 2%                         | 2%                             | 2%                            |
| Initial Yearly Savings (Gas, Oil)    | \$3,527.82                  | \$3,219.00                 | \$1,344.00                     | \$3,600.00                    |
| Assumed Inflation (Electricity)      | 3%                          | 3%                         | 3%                             | 3%                            |
| Initial Yearly Savings (Electricity) | \$2,177.13                  | \$1,942.83                 | \$830.71                       | \$1,905.83                    |
| Assumed Average Useful Life (Years)  | 20                          | 20                         | 20                             | 20                            |
| <b>Lifetime Savings</b>              | <b>\$144,217.01</b>         | <b>\$91,802.06</b>         | <b>\$54,977.09</b>             | <b>\$138,680.91</b>           |
| <u>Year</u>                          | <u>Annual Savings</u>       | <u>Annual Savings</u>      | <u>Annual Savings</u>          | <u>Annual Savings</u>         |
| 1                                    | \$5,704.95                  | \$5,161.83                 | \$2,174.71                     | \$5,505.83                    |
| 2                                    | \$5,840.82                  | \$5,284.50                 | \$2,226.51                     | \$5,635.01                    |
| 3                                    | \$5,980.06                  | \$5,410.20                 | \$2,279.60                     | \$5,767.34                    |
| 4                                    | \$6,122.76                  | \$5,539.01                 | \$2,334.00                     | \$5,902.90                    |
| 5                                    | \$6,269.00                  | \$5,671.02                 | \$2,389.76                     | \$6,041.78                    |
| 6                                    | \$6,418.89                  | \$5,806.31                 | \$2,446.90                     | \$6,184.07                    |
| 7                                    | \$6,572.50                  | \$5,944.96                 | \$2,505.47                     | \$6,329.85                    |
| 8                                    | \$6,729.95                  | \$6,087.06                 | \$2,565.50                     | \$6,479.20                    |
| 9                                    | \$6,891.32                  | \$6,232.69                 | \$2,627.03                     | \$6,632.22                    |
| 10                                   | \$7,056.73                  | \$6,381.96                 | \$2,690.09                     | \$6,789.01                    |
| 11                                   | \$7,226.27                  | \$6,534.95                 | \$2,754.73                     | \$6,949.66                    |
| 12                                   | \$7,400.06                  | \$6,691.75                 | \$2,820.99                     | \$7,114.26                    |
| 13                                   | \$7,578.19                  | \$6,852.48                 | \$2,888.91                     | \$7,282.93                    |
| 14                                   | \$7,760.80                  | \$7,017.23                 | \$2,958.53                     | \$7,455.76                    |
| 15                                   | \$7,947.99                  | \$7,186.11                 | \$3,029.90                     | \$7,632.86                    |
| 16                                   | \$8,139.88                  | \$7,359.22                 | \$3,103.06                     | \$7,814.35                    |
| 17                                   | \$8,336.59                  | \$7,536.67                 | \$3,178.07                     | \$8,000.33                    |
| 18                                   | \$8,538.26                  | \$7,718.58                 | \$3,254.96                     | \$8,190.92                    |
| 19                                   | \$8,745.01                  | \$7,905.07                 | \$3,333.79                     | \$8,386.24                    |
| 20                                   | \$8,956.98                  | \$8,096.24                 | \$3,414.61                     | \$8,586.41                    |
| 21                                   |                             |                            |                                |                               |
| 22                                   |                             |                            |                                |                               |
| 23                                   |                             |                            |                                |                               |
| 24                                   |                             |                            |                                |                               |

| Allenwood<br>Window Upgrade |                | Old Mill<br>Window Upgrade |               | Intermediate<br>Window Upgrade |               | High School<br>Window Upgrade |               |
|-----------------------------|----------------|----------------------------|---------------|--------------------------------|---------------|-------------------------------|---------------|
| Year                        | Cash Flow      | Year                       | Cash Flow     | Year                           | Cash Flow     | Year                          | Cash Flow     |
| 0                           | (\$225,000.00) | 0                          | (\$99,809.00) | 0                              | \$ (73,550)   | 0                             | \$ (150,100)  |
| 1                           | \$5,704.95     | 1                          | \$5,161.83    | 1                              | \$2,174.71    | 1                             | \$5,505.83    |
| 2                           | \$5,840.82     | 2                          | \$5,284.50    | 2                              | \$2,226.51    | 2                             | \$5,635.01    |
| 3                           | \$5,980.06     | 3                          | \$5,410.20    | 3                              | \$2,279.60    | 3                             | \$5,767.34    |
| 4                           | \$6,122.76     | 4                          | \$5,539.01    | 4                              | \$2,334.00    | 4                             | \$5,902.90    |
| 5                           | \$6,269.00     | 5                          | \$5,671.02    | 5                              | \$2,389.76    | 5                             | \$6,041.78    |
| 6                           | \$6,418.89     | 6                          | \$5,806.31    | 6                              | \$2,446.90    | 6                             | \$6,184.07    |
| 7                           | \$6,572.50     | 7                          | \$5,944.96    | 7                              | \$2,505.47    | 7                             | \$6,329.85    |
| 8                           | \$6,729.95     | 8                          | \$6,087.06    | 8                              | \$2,565.50    | 8                             | \$6,479.20    |
| 9                           | \$6,891.32     | 9                          | \$6,232.69    | 9                              | \$2,627.03    | 9                             | \$6,632.22    |
| 10                          | \$7,056.73     | 10                         | \$6,381.96    | 10                             | \$2,690.09    | 10                            | \$6,789.01    |
| 11                          | \$7,226.27     | 11                         | \$6,534.95    | 11                             | \$2,754.73    | 11                            | \$6,949.66    |
| 12                          | \$7,400.06     | 12                         | \$6,691.75    | 12                             | \$2,820.99    | 12                            | \$7,114.26    |
| 13                          | \$7,578.19     | 13                         | \$6,852.48    | 13                             | \$2,888.91    | 13                            | \$7,282.93    |
| 14                          | \$7,760.80     | 14                         | \$7,017.23    | 14                             | \$2,958.53    | 14                            | \$7,455.76    |
| 15                          | \$7,947.99     | 15                         | \$7,186.11    | 15                             | \$3,029.90    | 15                            | \$7,632.86    |
| 16                          | \$8,139.88     | 16                         | \$7,359.22    | 16                             | \$3,103.06    | 16                            | \$7,814.35    |
| 17                          | \$8,336.59     | 17                         | \$7,536.67    | 17                             | \$3,178.07    | 17                            | \$8,000.33    |
| 18                          | \$8,538.26     | 18                         | \$7,718.58    | 18                             | \$3,254.96    | 18                            | \$8,190.92    |
| 19                          | \$8,745.01     | 19                         | \$7,905.07    | 19                             | \$3,333.79    | 19                            | \$8,386.24    |
| 20                          | \$8,956.98     | 20                         | \$8,096.24    | 20                             | \$3,414.61    | 20                            | \$8,586.41    |
| 21                          |                | 21                         |               |                                |               |                               |               |
| 22                          |                | 22                         |               |                                |               |                               |               |
| 23                          |                | 23                         |               |                                |               |                               |               |
| 24                          |                | 24                         |               |                                |               |                               |               |
| IRR                         | -3.67%         | IRR                        | 2.49%         | IRR                            | -2.46%        | IRR                           | -0.69%        |
| NPV                         | (\$120,189.07) | NPV                        | (\$5,021.89)  | NPV                            | (\$33,595.07) | NPV                           | (\$49,277.48) |
| ARO                         | -4.13%         | ARO                        | -1.49%        | ARO                            | -3.71%        | ARO                           | -3.00%        |

| ECM                                  | Allenwood<br>Wall Insulation | Central<br>Wall Insulation | Intermediate<br>Wall Insulation | Allenwood Roof<br>Insulation<br>Wall Insulation |
|--------------------------------------|------------------------------|----------------------------|---------------------------------|-------------------------------------------------|
| Assumed Inflation (Gas, Oil)         | 2%                           | 2%                         | 2%                              | 2%                                              |
| Initial Yearly Savings (Gas, Oil)    | \$4,552.25                   | \$3,164.21                 | \$16,240.00                     | \$1,936.27                                      |
| Assumed Inflation (Electricity)      | 3%                           | 3%                         | 3%                              | 3%                                              |
| Initial Yearly Savings (Electricity) | \$3,133.98                   | \$1,207.42                 | \$9,574.26                      | \$1,197.57                                      |
| Assumed Average Useful Life (Years)  | 20                           | 20                         | 20                              | 20                                              |
| <b>Lifetime Savings</b>              | <b>\$194,818.78</b>          | <b>\$109,325.89</b>        | <b>\$651,853.21</b>             | <b>\$79,225.48</b>                              |
| <u>Year</u>                          | <u>Annual Savings</u>        | <u>Annual Savings</u>      | <u>Annual Savings</u>           | <u>Annual Savings</u>                           |
| 1                                    | \$7,686.23                   | \$4,371.63                 | \$25,814.26                     | \$3,133.84                                      |
| 2                                    | \$7,871.29                   | \$4,471.14                 | \$26,426.29                     | \$3,208.49                                      |
| 3                                    | \$8,061.00                   | \$4,573.00                 | \$27,053.43                     | \$3,285.00                                      |
| 4                                    | \$8,255.46                   | \$4,677.27                 | \$27,696.07                     | \$3,363.40                                      |
| 5                                    | \$8,454.82                   | \$4,784.01                 | \$28,354.61                     | \$3,443.76                                      |
| 6                                    | \$8,659.19                   | \$4,893.28                 | \$29,029.46                     | \$3,526.11                                      |
| 7                                    | \$8,868.70                   | \$5,005.14                 | \$29,721.04                     | \$3,610.52                                      |
| 8                                    | \$9,083.50                   | \$5,119.66                 | \$30,429.79                     | \$3,697.03                                      |
| 9                                    | \$9,303.71                   | \$5,236.90                 | \$31,156.13                     | \$3,785.70                                      |
| 10                                   | \$9,529.49                   | \$5,356.94                 | \$31,900.54                     | \$3,876.58                                      |
| 11                                   | \$9,760.97                   | \$5,479.83                 | \$32,663.47                     | \$3,969.74                                      |
| 12                                   | \$9,998.31                   | \$5,605.65                 | \$33,445.41                     | \$4,065.23                                      |
| 13                                   | \$10,241.65                  | \$5,734.48                 | \$34,246.85                     | \$4,163.11                                      |
| 14                                   | \$10,491.17                  | \$5,866.38                 | \$35,068.29                     | \$4,263.45                                      |
| 15                                   | \$10,747.02                  | \$6,001.44                 | \$35,910.26                     | \$4,366.30                                      |
| 16                                   | \$11,009.36                  | \$6,139.74                 | \$36,773.29                     | \$4,471.74                                      |
| 17                                   | \$11,278.37                  | \$6,281.34                 | \$37,657.92                     | \$4,579.84                                      |
| 18                                   | \$11,554.23                  | \$6,426.34                 | \$38,564.71                     | \$4,690.65                                      |
| 19                                   | \$11,837.12                  | \$6,574.83                 | \$39,494.25                     | \$4,804.26                                      |
| 20                                   | \$12,127.21                  | \$6,726.88                 | \$40,447.13                     | \$4,920.73                                      |
| 21                                   |                              |                            |                                 |                                                 |
| 22                                   |                              |                            |                                 |                                                 |
| 23                                   |                              |                            |                                 |                                                 |
| 24                                   |                              |                            |                                 |                                                 |

| Allenwood<br>Wall Insulation |                | Central<br>Wall Insulation |                | Intermediate<br>Wall Insulation |              | Allenwood Roof Insulation<br>Roof Insulation |               |
|------------------------------|----------------|----------------------------|----------------|---------------------------------|--------------|----------------------------------------------|---------------|
| Year                         | Cash Flow      | Year                       | Cash Flow      | Year                            | Cash Flow    | Year                                         | Cash Flow     |
| 0                            | (\$157,648.00) | 0                          | \$ (226,150)   | 0                               | \$ (252,000) | 0                                            | \$ (90,300)   |
| 1                            | \$7,686.23     | 1                          | \$4,371.63     | 1                               | \$25,814.26  | 1                                            | \$3,133.84    |
| 2                            | \$7,871.29     | 2                          | \$4,471.14     | 2                               | \$26,426.29  | 2                                            | \$3,208.49    |
| 3                            | \$8,061.00     | 3                          | \$4,573.00     | 3                               | \$27,053.43  | 3                                            | \$3,285.00    |
| 4                            | \$8,255.46     | 4                          | \$4,677.27     | 4                               | \$27,696.07  | 4                                            | \$3,363.40    |
| 5                            | \$8,454.82     | 5                          | \$4,784.01     | 5                               | \$28,354.61  | 5                                            | \$3,443.76    |
| 6                            | \$8,659.19     | 6                          | \$4,893.28     | 6                               | \$29,029.46  | 6                                            | \$3,526.11    |
| 7                            | \$8,868.70     | 7                          | \$5,005.14     | 7                               | \$29,721.04  | 7                                            | \$3,610.52    |
| 8                            | \$9,083.50     | 8                          | \$5,119.66     | 8                               | \$30,429.79  | 8                                            | \$3,697.03    |
| 9                            | \$9,303.71     | 9                          | \$5,236.90     | 9                               | \$31,156.13  | 9                                            | \$3,785.70    |
| 10                           | \$9,529.49     | 10                         | \$5,356.94     | 10                              | \$31,900.54  | 10                                           | \$3,876.58    |
| 11                           | \$9,760.97     | 11                         | \$5,479.83     | 11                              | \$32,663.47  | 11                                           | \$3,969.74    |
| 12                           | \$9,998.31     | 12                         | \$5,605.65     | 12                              | \$33,445.41  | 12                                           | \$4,065.23    |
| 13                           | \$10,241.65    | 13                         | \$5,734.48     | 13                              | \$34,246.85  | 13                                           | \$4,163.11    |
| 14                           | \$10,491.17    | 14                         | \$5,866.38     | 14                              | \$35,068.29  | 14                                           | \$4,263.45    |
| 15                           | \$10,747.02    | 15                         | \$6,001.44     | 15                              | \$35,910.26  | 15                                           | \$4,366.30    |
| 16                           | \$11,009.36    | 16                         | \$6,139.74     | 16                              | \$36,773.29  | 16                                           | \$4,471.74    |
| 17                           | \$11,278.37    | 17                         | \$6,281.34     | 17                              | \$37,657.92  | 17                                           | \$4,579.84    |
| 18                           | \$11,554.23    | 18                         | \$6,426.34     | 18                              | \$38,564.71  | 18                                           | \$4,690.65    |
| 19                           | \$11,837.12    | 19                         | \$6,574.83     | 19                              | \$39,494.25  | 19                                           | \$4,804.26    |
| 20                           | \$12,127.21    | 20                         | \$6,726.88     | 20                              | \$40,447.13  | 20                                           | \$4,920.73    |
| 21                           |                |                            |                |                                 |              |                                              |               |
| 22                           |                |                            |                |                                 |              |                                              |               |
| 23                           |                |                            |                |                                 |              |                                              |               |
| 24                           |                |                            |                |                                 |              |                                              |               |
| IRR                          | 1.95%          | IRR                        | -5.78%         | IRR                             | 10.33%       | IRR                                          | -1.13%        |
| NPV                          | (\$16,097.77)  | NPV                        | (\$146,613.90) | NPV                             | \$221,789.48 | NPV                                          | (\$32,722.50) |
| ARO I                        | -1.79%         | ARO I                      | -4.73%         | ARO I                           | 3.58%        | ARO I                                        | -3.20%        |

| ECM                                  | Allenwood<br>Hot Water VFD | Old Mill<br>Hot Water VFD | Intermediate<br>Hot Water VFD |
|--------------------------------------|----------------------------|---------------------------|-------------------------------|
| Assumed Inflation (Gas, Oil)         | 2%                         | 2%                        | 2%                            |
| Initial Yearly Savings (Gas, Oil)    | -\$98.69                   | -\$555.00                 | -\$336.00                     |
| Assumed Inflation (Electricity)      | 3%                         | 3%                        | 3%                            |
| Initial Yearly Savings (Electricity) | \$261.92                   | \$1,735.90                | \$1,013.75                    |
| Assumed Average Useful Life (Years)  | 20                         | 20                        | 20                            |
| <b>Lifetime Savings</b>              | <b>\$3,164.77</b>          | <b>\$22,688.06</b>        | <b>\$13,043.97</b>            |
| <u>Year</u>                          | <u>Annual Savings</u>      | <u>Annual Savings</u>     | <u>Annual Savings</u>         |
| 1                                    | \$163.23                   | \$1,180.90                | \$677.75                      |
| 2                                    | \$169.12                   | \$1,221.88                | \$701.44                      |
| 3                                    | \$175.20                   | \$1,264.20                | \$725.91                      |
| 4                                    | \$181.48                   | \$1,307.90                | \$751.18                      |
| 5                                    | \$187.97                   | \$1,353.02                | \$777.28                      |
| 6                                    | \$194.68                   | \$1,399.62                | \$804.24                      |
| 7                                    | \$201.61                   | \$1,447.74                | \$832.07                      |
| 8                                    | \$208.77                   | \$1,497.42                | \$860.82                      |
| 9                                    | \$216.16                   | \$1,548.72                | \$890.50                      |
| 10                                   | \$223.80                   | \$1,601.68                | \$921.16                      |
| 11                                   | \$231.70                   | \$1,656.37                | \$952.81                      |
| 12                                   | \$239.85                   | \$1,712.82                | \$985.49                      |
| 13                                   | \$248.27                   | \$1,771.11                | \$1,019.23                    |
| 14                                   | \$256.97                   | \$1,831.28                | \$1,054.07                    |
| 15                                   | \$265.96                   | \$1,893.40                | \$1,090.04                    |
| 16                                   |                            |                           |                               |
| 17                                   |                            |                           |                               |
| 18                                   |                            |                           |                               |
| 19                                   |                            |                           |                               |
| 20                                   |                            |                           |                               |
| 21                                   |                            |                           |                               |
| 22                                   |                            |                           |                               |
| 23                                   |                            |                           |                               |
| 24                                   |                            |                           |                               |

| Allenwood<br>Hot Water VFD |              | Old Mill<br>Hot Water VFD |              | Intermediate<br>Hot Water VFD |            |
|----------------------------|--------------|---------------------------|--------------|-------------------------------|------------|
| Year                       | Cash Flow    | Year                      | Cash Flow    | Year                          | Cash Flow  |
| 0                          | (\$7,300.00) | 0                         | (\$7,300.00) | 0                             | \$ (7,300) |
| 1                          | \$163.23     | 1                         | \$1,180.90   | 1                             | \$677.75   |
| 2                          | \$169.12     | 2                         | \$1,221.88   | 2                             | \$701.44   |
| 3                          | \$175.20     | 3                         | \$1,264.20   | 3                             | \$725.91   |
| 4                          | \$181.48     | 4                         | \$1,307.90   | 4                             | \$751.18   |
| 5                          | \$187.97     | 5                         | \$1,353.02   | 5                             | \$777.28   |
| 6                          | \$194.68     | 6                         | \$1,399.62   | 6                             | \$804.24   |
| 7                          | \$201.61     | 7                         | \$1,447.74   | 7                             | \$832.07   |
| 8                          | \$208.77     | 8                         | \$1,497.42   | 8                             | \$860.82   |
| 9                          | \$216.16     | 9                         | \$1,548.72   | 9                             | \$890.50   |
| 10                         | \$223.80     | 10                        | \$1,601.68   | 10                            | \$921.16   |
| 11                         | \$231.70     | 11                        | \$1,656.37   | 11                            | \$952.81   |
| 12                         | \$239.85     | 12                        | \$1,712.82   | 12                            | \$985.49   |
| 13                         | \$248.27     | 13                        | \$1,771.11   | 13                            | \$1,019.23 |
| 14                         | \$256.97     | 14                        | \$1,831.28   | 14                            | \$1,054.07 |
| 15                         | \$265.96     | 15                        | \$1,893.40   | 15                            | \$1,090.04 |
| 16                         |              | 16                        |              | 16                            |            |
| 17                         |              | 17                        |              | 17                            |            |
| 18                         |              | 18                        |              | 18                            |            |
| 19                         |              | 19                        |              | 19                            |            |
| 20                         |              | 20                        |              | 20                            |            |
| 21                         |              | 21                        |              |                               |            |
| 22                         |              | 22                        |              |                               |            |
| 23                         |              | 23                        |              |                               |            |
| 24                         |              | 24                        |              |                               |            |
| IRR                        | -8.48%       | IRR                       | 17.11%       | IRR                           | 7.57%      |
| NPV                        | (\$4,829.16) | NPV                       | \$10,424.46  | NPV                           | \$2,889.03 |
| ARO I                      | -4.43%       | ARO I                     | 9.51%        | ARO I                         | 2.62%      |



| ECM                                  | Allenwood<br>HVAC Occ Sensor | Old Mill<br>HVAC Occ Sensor | Central<br>HVAC Occ Sensor | Intermediate<br>HVAC Occ Sensor | High School<br>HVAC Occ Sensor |
|--------------------------------------|------------------------------|-----------------------------|----------------------------|---------------------------------|--------------------------------|
| Assumed Inflation (Gas, Oil)         | 2%                           | 2%                          | 2%                         | 2%                              | 2%                             |
| Initial Yearly Savings (Gas, Oil)    | \$7,578.28                   | \$22,755.00                 | \$753.69                   | \$9,968.00                      | \$14,640.00                    |
| Assumed Inflation (Electricity)      | 3%                           | 3%                          | 3%                         | 3%                              | 3%                             |
| Initial Yearly Savings (Electricity) | \$6,959.85                   | \$9,318.98                  | \$2,665.65                 | -\$2,323.17                     | \$20,817.53                    |
| Assumed Average Useful Life (Years)  | 20                           | 20                          | 20                         | 20                              | 20                             |
| <b>Lifetime Savings</b>              | <b>\$260,499.95</b>          | <b>\$566,834.62</b>         | <b>\$62,611.98</b>         | <b>\$129,172.42</b>             | <b>\$915,088.39</b>            |
| <u>Year</u>                          | <u>Annual Savings</u>        | <u>Annual Savings</u>       | <u>Annual Savings</u>      | <u>Annual Savings</u>           | <u>Annual Savings</u>          |
| 1                                    | \$14,538.13                  | \$32,073.98                 | \$3,419.34                 | \$7,644.83                      | \$35,457.53                    |
| 2                                    | \$14,898.49                  | \$32,808.65                 | \$3,514.38                 | \$7,774.50                      | \$36,374.86                    |
| 3                                    | \$15,268.14                  | \$33,560.81                 | \$3,612.12                 | \$7,906.06                      | \$37,316.78                    |
| 4                                    | \$15,647.34                  | \$34,330.89                 | \$3,712.64                 | \$8,039.54                      | \$38,283.96                    |
| 5                                    | \$16,036.34                  | \$35,119.34                 | \$3,816.03                 | \$8,174.94                      | \$39,277.12                    |
| 6                                    | \$16,435.40                  | \$35,926.61                 | \$3,922.35                 | \$8,312.29                      | \$40,296.97                    |
| 7                                    | \$16,844.80                  | \$36,753.18                 | \$4,031.70                 | \$8,451.61                      | \$41,344.24                    |
| 8                                    | \$17,264.80                  | \$37,599.51                 | \$4,144.16                 | \$8,592.90                      | \$42,419.70                    |
| 9                                    | \$17,695.69                  | \$38,466.11                 | \$4,259.83                 | \$8,736.18                      | \$43,524.12                    |
| 10                                   | \$18,137.77                  | \$39,353.49                 | \$4,378.79                 | \$8,881.48                      | \$44,658.31                    |
| 11                                   | \$18,591.33                  | \$40,262.15                 | \$4,501.15                 | \$9,028.80                      | \$45,823.10                    |
| 12                                   | \$19,056.69                  | \$41,192.63                 | \$4,627.00                 | \$9,178.15                      | \$47,019.33                    |
| 13                                   | \$19,534.17                  | \$42,145.48                 | \$4,756.43                 | \$9,329.56                      | \$48,247.88                    |
| 14                                   | \$20,024.08                  | \$43,121.26                 | \$4,889.57                 | \$9,483.02                      | \$49,509.65                    |
| 15                                   | \$20,526.77                  | \$44,120.53                 | \$5,026.51                 | \$9,638.57                      | \$50,805.55                    |
| 16                                   |                              |                             |                            |                                 | \$52,136.55                    |
| 17                                   |                              |                             |                            |                                 | \$53,503.61                    |
| 18                                   |                              |                             |                            |                                 | \$54,907.74                    |
| 19                                   |                              |                             |                            |                                 | \$56,349.98                    |
| 20                                   |                              |                             |                            |                                 | \$57,831.38                    |
| 21                                   |                              |                             |                            |                                 |                                |
| 22                                   |                              |                             |                            |                                 |                                |
| 23                                   |                              |                             |                            |                                 |                                |
| 24                                   |                              |                             |                            |                                 |                                |

| Allenwood<br>HVAC Occ Sensor |               | Old Mill<br>HVAC Occ Sensor |               | Central<br>HVAC Occ Sensor |               | Intermediate<br>HVAC Occ Sensor |               | High School<br>HVAC Occ Sensor |              |
|------------------------------|---------------|-----------------------------|---------------|----------------------------|---------------|---------------------------------|---------------|--------------------------------|--------------|
| Year                         | Cash Flow     | Year                        | Cash Flow     | Year                       | Cash Flow     | Year                            | Cash Flow     | Year                           | Cash Flow    |
| 0                            | (\$80,000.00) | 0                           | (\$88,000.00) | 0                          | \$ (88,000)   | 0                               | \$ (138,000)  | 0                              | \$ (138,000) |
| 1                            | \$14,538.13   | 1                           | \$32,073.98   | 1                          | \$3,419.34    | 1                               | \$7,644.83    | 1                              | \$35,457.53  |
| 2                            | \$14,898.49   | 2                           | \$32,808.65   | 2                          | \$3,514.38    | 2                               | \$7,774.50    | 2                              | \$36,374.86  |
| 3                            | \$15,268.14   | 3                           | \$33,560.81   | 3                          | \$3,612.12    | 3                               | \$7,906.06    | 3                              | \$37,316.78  |
| 4                            | \$15,647.34   | 4                           | \$34,330.89   | 4                          | \$3,712.64    | 4                               | \$8,039.54    | 4                              | \$38,283.96  |
| 5                            | \$16,036.34   | 5                           | \$35,119.34   | 5                          | \$3,816.03    | 5                               | \$8,174.94    | 5                              | \$39,277.12  |
| 6                            | \$16,435.40   | 6                           | \$35,926.61   | 6                          | \$3,922.35    | 6                               | \$8,312.29    | 6                              | \$40,296.97  |
| 7                            | \$16,844.80   | 7                           | \$36,753.18   | 7                          | \$4,031.70    | 7                               | \$8,451.61    | 7                              | \$41,344.24  |
| 8                            | \$17,264.80   | 8                           | \$37,599.51   | 8                          | \$4,144.16    | 8                               | \$8,592.90    | 8                              | \$42,419.70  |
| 9                            | \$17,695.69   | 9                           | \$38,466.11   | 9                          | \$4,259.83    | 9                               | \$8,736.18    | 9                              | \$43,524.12  |
| 10                           | \$18,137.77   | 10                          | \$39,353.49   | 10                         | \$4,378.79    | 10                              | \$8,881.48    | 10                             | \$44,658.31  |
| 11                           | \$18,591.33   | 11                          | \$40,262.15   | 11                         | \$4,501.15    | 11                              | \$9,028.80    | 11                             | \$45,823.10  |
| 12                           | \$19,056.69   | 12                          | \$41,192.63   | 12                         | \$4,627.00    | 12                              | \$9,178.15    | 12                             | \$47,019.33  |
| 13                           | \$19,534.17   | 13                          | \$42,145.48   | 13                         | \$4,756.43    | 13                              | \$9,329.56    | 13                             | \$48,247.88  |
| 14                           | \$20,024.08   | 14                          | \$43,121.26   | 14                         | \$4,889.57    | 14                              | \$9,483.02    | 14                             | \$49,509.65  |
| 15                           | \$20,526.77   | 15                          | \$44,120.53   | 15                         | \$5,026.51    | 15                              | \$9,638.57    | 15                             | \$50,805.55  |
| 16                           |               | 16                          |               | 16                         | \$0.00        | 16                              |               | 16                             | \$52,136.55  |
| 17                           |               | 17                          |               | 17                         | \$0.00        | 17                              |               | 17                             | \$53,503.61  |
| 18                           |               | 18                          |               | 18                         | \$0.00        | 18                              |               | 18                             | \$54,907.74  |
| 19                           |               | 19                          |               | 19                         | \$0.00        | 19                              |               | 19                             | \$56,349.98  |
| 20                           |               | 20                          |               | 20                         | \$0.00        | 20                              |               | 20                             | \$57,831.38  |
| 21                           |               | 21                          |               |                            |               |                                 |               |                                |              |
| 22                           |               | 22                          |               |                            |               |                                 |               |                                |              |
| 23                           |               | 23                          |               |                            |               |                                 |               |                                |              |
| 24                           |               | 24                          |               |                            |               |                                 |               |                                |              |
| IRR                          | 18.64%        | IRR                         | 38.35%        | IRR                        | -3.77%        | IRR                             | -0.79%        | IRR                            | 27.98%       |
| NPV                          | \$124,526.43  | NPV                         | \$357,496.07  | NPV                        | (\$38,919.32) | NPV                             | (\$36,129.83) | NPV                            | \$525,742.75 |
| ARO                          | 11.51%        | ARO                         | 29.78%        | ARO                        | -2.78%        | ARO                             | -1.13%        | ARO                            | 19.03%       |

The graphic consists of a large, light blue rectangle in the top-left corner and a smaller, medium blue rectangle in the bottom-right corner. These two rectangles overlap at a central point. A thin blue line runs vertically from the top of the page down to the intersection point, and a thin blue line runs horizontally from the left edge of the page to the intersection point. The text "Appendix J" is positioned at the intersection of these two lines.

## Appendix J

Wall Township Board of Education  
(Minimum Site Wind Speed @42.7m - 4.44 m/s)

Annual kWh 77,954  
Engineer's Opinion of Probable Cost \$450,000.00

**Assumptions**  
Annual System Degredation 0.50%  
Annual Utility Inflation 3.00%  
Annual Maintenance Costs \$0.02/kWh Production  
REC Factor \$25/MWh Production  
REIP Incentive \$3.20/kWh First 16,000 kWh  
\$0.50/kWh 16,000 kWh - 750,000 kWh

| Year | Utility Price | Annual Wind kWh Production | Utility Savings | Renewable Energy Credits (RECs) | Renewable Energy Incentive Program (REIP)* | Maintenance Costs | Annual Cash Flow | Cumulative Cash Flow |
|------|---------------|----------------------------|-----------------|---------------------------------|--------------------------------------------|-------------------|------------------|----------------------|
| 1    | 0.1500        | 77,954.0                   | \$11,693.1      | \$1,949                         | \$0                                        | (\$1,559)         | \$12,082.9       | \$12,082.9           |
| 2    | 0.1545        | 77,564.2                   | \$11,983.7      | \$1,939                         | \$0                                        | (\$1,551)         | \$12,371.5       | \$24,454.4           |
| 3    | 0.1591        | 77,176.4                   | \$12,281.5      | \$1,929                         | \$0                                        | (\$1,544)         | \$12,667.3       | \$37,121.7           |
| 4    | 0.1639        | 76,790.5                   | \$12,586.7      | \$1,920                         | \$0                                        | (\$1,536)         | \$12,970.6       | \$50,092.3           |
| 5    | 0.1688        | 76,406.6                   | \$12,899.4      | \$1,910                         | \$0                                        | (\$1,528)         | \$13,281.5       | \$63,373.8           |
| 6    | 0.1739        | 76,024.5                   | \$13,220.0      | \$1,901                         | \$0                                        | (\$1,520)         | \$13,600.1       | \$76,973.9           |
| 7    | 0.1791        | 75,644.4                   | \$13,548.5      | \$1,891                         | \$0                                        | (\$1,513)         | \$13,926.7       | \$90,900.6           |
| 8    | 0.1845        | 75,266.2                   | \$13,885.2      | \$1,882                         | \$0                                        | (\$1,505)         | \$14,261.5       | \$105,162.2          |
| 9    | 0.1900        | 74,889.9                   | \$14,230.2      | \$1,872                         | \$0                                        | (\$1,498)         | \$14,604.7       | \$119,766.9          |
| 10   | 0.1957        | 74,515.4                   | \$14,583.9      | \$1,863                         | \$0                                        | (\$1,490)         | \$14,956.4       | \$134,723.3          |
| 11   | 0.2016        | 74,142.8                   | \$14,946.3      | \$1,854                         | \$0                                        | (\$1,483)         | \$15,317.0       | \$150,040.3          |
| 12   | 0.2076        | 73,772.1                   | \$15,317.7      | \$1,844                         | \$0                                        | (\$1,475)         | \$15,686.5       | \$165,726.8          |
| 13   | 0.2139        | 73,403.3                   | \$15,698.3      | \$1,835                         | \$0                                        | (\$1,468)         | \$16,065.3       | \$181,792.2          |
| 14   | 0.2203        | 73,036.2                   | \$16,088.4      | \$1,826                         | \$0                                        | (\$1,461)         | \$16,453.6       | \$198,245.8          |
| 15   | 0.2269        | 72,671.1                   | \$16,488.2      | \$1,817                         | \$0                                        | (\$1,453)         | \$16,851.6       | \$215,097.3          |
| 16   | 0.2337        | 72,307.7                   | \$16,898.0      | \$1,808                         | \$0                                        | (\$1,446)         | \$17,259.5       | \$232,356.8          |
| 17   | 0.2407        | 71,946.2                   | \$17,317.9      | \$1,799                         | \$0                                        | (\$1,439)         | \$17,677.6       | \$250,034.4          |
| 18   | 0.2479        | 71,586.4                   | \$17,748.2      | \$1,790                         | \$0                                        | (\$1,432)         | \$18,106.2       | \$268,140.6          |
| 19   | 0.2554        | 71,228.5                   | \$18,189.3      | \$1,781                         | \$0                                        | (\$1,425)         | \$18,545.4       | \$286,686.0          |
| 20   | 0.2630        | 70,872.4                   | \$18,641.3      | \$1,772                         | \$0                                        | (\$1,417)         | \$18,995.6       | \$305,681.6          |
| 21   | 0.2709        | 70,518.0                   | \$19,104.5      | \$1,763                         | \$0                                        | (\$1,410)         | \$19,457.1       | \$325,138.7          |
| 22   | 0.2790        | 70,165.4                   | \$19,579.3      | \$1,754                         | \$0                                        | (\$1,403)         | \$19,930.1       | \$345,068.8          |
| 23   | 0.2874        | 69,814.6                   | \$20,065.8      | \$1,745                         | \$0                                        | (\$1,396)         | \$20,414.9       | \$365,483.7          |
| 24   | 0.2960        | 69,465.5                   | \$20,564.4      | \$1,737                         | \$0                                        | (\$1,389)         | \$20,911.8       | \$386,395.4          |
| 25   | 0.3049        | 69,118.2                   | \$21,075.5      | \$1,728                         | \$0                                        | (\$1,382)         | \$21,421.0       | \$407,816.5          |

\*REIP program is currently on hold.

Wall Township Board of Education  
(Maximum Site Wind Speed @42.7m - 6.41 m/s)

Annual kWh 158,179  
Engineer's Opinion of Probable Cost \$450,000.00

**Assumptions**  
Annual System Degredation 0.50%  
Annual Utility Inflation 3.00%  
Annual Maintenance Costs \$0.02/kWh Production  
REC Factor \$25/MWh Production  
REIP Incentive \$3.20/kWh First 16,000 kWh  
\$0.50/kWh 16,000 kWh - 750,000 kWh

| Year | Utility Price | Annual Wind kWh Production | Utility Savings | Renewable Energy Credits (RECs) | Renewable Energy Incentive Program (REIP)* | Maintenance Costs | Annual Cash Flow | Cumulative Cash Flow |
|------|---------------|----------------------------|-----------------|---------------------------------|--------------------------------------------|-------------------|------------------|----------------------|
| 1    | 0.1500        | 158,179.0                  | \$23,726.9      | \$3,954                         | \$0                                        | (\$3,164)         | \$24,517.7       | \$24,517.7           |
| 2    | 0.1545        | 157,388.1                  | \$24,316.5      | \$3,935                         | \$0                                        | (\$3,148)         | \$25,103.4       | \$49,621.1           |
| 3    | 0.1591        | 156,601.2                  | \$24,920.7      | \$3,915                         | \$0                                        | (\$3,132)         | \$25,703.7       | \$75,324.9           |
| 4    | 0.1639        | 155,818.2                  | \$25,540.0      | \$3,895                         | \$0                                        | (\$3,116)         | \$26,319.1       | \$101,644.0          |
| 5    | 0.1688        | 155,039.1                  | \$26,174.7      | \$3,876                         | \$0                                        | (\$3,101)         | \$26,949.9       | \$128,593.8          |
| 6    | 0.1739        | 154,263.9                  | \$26,825.1      | \$3,857                         | \$0                                        | (\$3,085)         | \$27,596.4       | \$156,190.3          |
| 7    | 0.1791        | 153,492.6                  | \$27,491.7      | \$3,837                         | \$0                                        | (\$3,070)         | \$28,259.2       | \$184,449.5          |
| 8    | 0.1845        | 152,725.1                  | \$28,174.9      | \$3,818                         | \$0                                        | (\$3,055)         | \$28,938.5       | \$213,388.0          |
| 9    | 0.1900        | 151,961.5                  | \$28,875.0      | \$3,799                         | \$0                                        | (\$3,039)         | \$29,634.8       | \$243,022.8          |
| 10   | 0.1957        | 151,201.7                  | \$29,592.6      | \$3,780                         | \$0                                        | (\$3,024)         | \$30,348.6       | \$273,371.4          |
| 11   | 0.2016        | 150,445.6                  | \$30,328.0      | \$3,761                         | \$0                                        | (\$3,009)         | \$31,080.2       | \$304,451.6          |
| 12   | 0.2076        | 149,693.4                  | \$31,081.6      | \$3,742                         | \$0                                        | (\$2,994)         | \$31,830.1       | \$336,281.7          |
| 13   | 0.2139        | 148,945.0                  | \$31,854.0      | \$3,724                         | \$0                                        | (\$2,979)         | \$32,598.7       | \$368,880.4          |
| 14   | 0.2203        | 148,200.2                  | \$32,645.6      | \$3,705                         | \$0                                        | (\$2,964)         | \$33,386.6       | \$402,266.9          |
| 15   | 0.2269        | 147,459.2                  | \$33,456.8      | \$3,686                         | \$0                                        | (\$2,949)         | \$34,194.1       | \$436,461.0          |
| 16   | 0.2337        | 146,721.9                  | \$34,288.2      | \$3,668                         | \$0                                        | (\$2,934)         | \$35,021.8       | \$471,482.8          |
| 17   | 0.2407        | 145,988.3                  | \$35,140.3      | \$3,650                         | \$0                                        | (\$2,920)         | \$35,870.2       | \$507,353.0          |
| 18   | 0.2479        | 145,258.4                  | \$36,013.5      | \$3,631                         | \$0                                        | (\$2,905)         | \$36,739.8       | \$544,092.8          |
| 19   | 0.2554        | 144,532.1                  | \$36,908.4      | \$3,613                         | \$0                                        | (\$2,891)         | \$37,631.1       | \$581,723.9          |
| 20   | 0.2630        | 143,809.4                  | \$37,825.6      | \$3,595                         | \$0                                        | (\$2,876)         | \$38,544.7       | \$620,268.6          |
| 21   | 0.2709        | 143,090.4                  | \$38,765.6      | \$3,577                         | \$0                                        | (\$2,862)         | \$39,481.0       | \$659,749.6          |
| 22   | 0.2790        | 142,374.9                  | \$39,728.9      | \$3,559                         | \$0                                        | (\$2,847)         | \$40,440.8       | \$700,190.4          |
| 23   | 0.2874        | 141,663.1                  | \$40,716.2      | \$3,542                         | \$0                                        | (\$2,833)         | \$41,424.5       | \$741,614.8          |
| 24   | 0.2960        | 140,954.7                  | \$41,728.0      | \$3,524                         | \$0                                        | (\$2,819)         | \$42,432.7       | \$784,047.6          |
| 25   | 0.3049        | 140,250.0                  | \$42,764.9      | \$3,506                         | \$0                                        | (\$2,805)         | \$43,466.1       | \$827,513.7          |

\*REIP program is currently on hold.

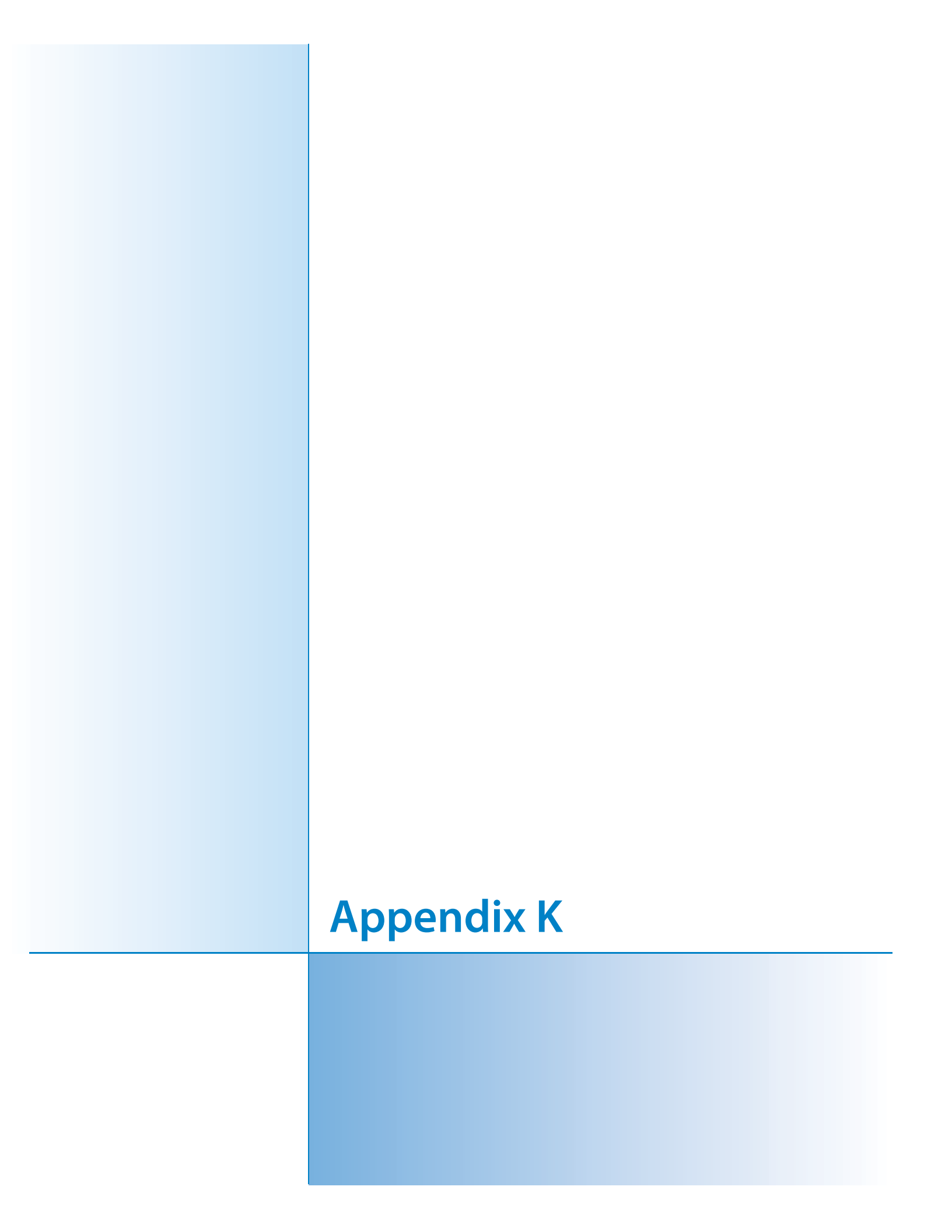
Wall Township Board of Education  
(Average Site Wind Speed @42.7m - 5.52 m/s)

Annual kWh 124,628  
Engineer's Opinion of Probable Cost \$450,000.00

- Assumptions**
- Annual System Degredation 0.50%
  - Annual Utility Inflation 3.00%
  - Annual Maintenance Costs \$0.02/kWh Production
  - REC Factor \$25/MWh Production
  - REIP Incentive \$3.20/kWh First 16,000 kWh  
\$0.50/kWh 16,000 kWh - 750,000 kWh

| Year | Utility Price | Annual Wind kWh Production | Utility Savings | Renewable Energy Credits (RECs) | Renewable Energy Incentive Program (REIP)* | Maintenance Costs | Annual Cash Flow | Cumulative Cash Flow |
|------|---------------|----------------------------|-----------------|---------------------------------|--------------------------------------------|-------------------|------------------|----------------------|
| 1    | 0.1500        | 124,628.0                  | \$18,694.2      | \$3,116                         | \$0                                        | (\$2,493)         | \$19,317.3       | \$19,317.3           |
| 2    | 0.1545        | 124,004.9                  | \$19,158.8      | \$3,100                         | \$0                                        | (\$2,480)         | \$19,778.8       | \$39,096.1           |
| 3    | 0.1591        | 123,384.8                  | \$19,634.8      | \$3,085                         | \$0                                        | (\$2,468)         | \$20,251.8       | \$59,347.9           |
| 4    | 0.1639        | 122,767.9                  | \$20,122.8      | \$3,069                         | \$0                                        | (\$2,455)         | \$20,736.6       | \$80,084.5           |
| 5    | 0.1688        | 122,154.1                  | \$20,622.8      | \$3,054                         | \$0                                        | (\$2,443)         | \$21,233.6       | \$101,318.1          |
| 6    | 0.1739        | 121,543.3                  | \$21,135.3      | \$3,039                         | \$0                                        | (\$2,431)         | \$21,743.0       | \$123,061.1          |
| 7    | 0.1791        | 120,935.6                  | \$21,660.5      | \$3,023                         | \$0                                        | (\$2,419)         | \$22,265.2       | \$145,326.3          |
| 8    | 0.1845        | 120,330.9                  | \$22,198.8      | \$3,008                         | \$0                                        | (\$2,407)         | \$22,800.4       | \$168,126.7          |
| 9    | 0.1900        | 119,729.3                  | \$22,750.4      | \$2,993                         | \$0                                        | (\$2,395)         | \$23,349.1       | \$191,475.8          |
| 10   | 0.1957        | 119,130.6                  | \$23,315.8      | \$2,978                         | \$0                                        | (\$2,383)         | \$23,911.4       | \$215,387.2          |
| 11   | 0.2016        | 118,535.0                  | \$23,895.2      | \$2,963                         | \$0                                        | (\$2,371)         | \$24,487.8       | \$239,875.0          |
| 12   | 0.2076        | 117,942.3                  | \$24,489.0      | \$2,949                         | \$0                                        | (\$2,359)         | \$25,078.7       | \$264,953.7          |
| 13   | 0.2139        | 117,352.6                  | \$25,097.5      | \$2,934                         | \$0                                        | (\$2,347)         | \$25,684.3       | \$290,638.0          |
| 14   | 0.2203        | 116,765.8                  | \$25,721.2      | \$2,919                         | \$0                                        | (\$2,335)         | \$26,305.0       | \$316,943.0          |
| 15   | 0.2269        | 116,182.0                  | \$26,360.3      | \$2,905                         | \$0                                        | (\$2,324)         | \$26,941.3       | \$343,884.2          |
| 16   | 0.2337        | 115,601.1                  | \$27,015.4      | \$2,890                         | \$0                                        | (\$2,312)         | \$27,593.4       | \$371,477.6          |
| 17   | 0.2407        | 115,023.1                  | \$27,686.7      | \$2,876                         | \$0                                        | (\$2,300)         | \$28,261.9       | \$399,739.5          |
| 18   | 0.2479        | 114,447.9                  | \$28,374.8      | \$2,861                         | \$0                                        | (\$2,289)         | \$28,947.0       | \$428,686.5          |
| 19   | 0.2554        | 113,875.7                  | \$29,079.9      | \$2,847                         | \$0                                        | (\$2,278)         | \$29,649.2       | \$458,335.7          |
| 20   | 0.2630        | 113,306.3                  | \$29,802.5      | \$2,833                         | \$0                                        | (\$2,266)         | \$30,369.0       | \$488,704.8          |
| 21   | 0.2709        | 112,739.8                  | \$30,543.1      | \$2,818                         | \$0                                        | (\$2,255)         | \$31,106.8       | \$519,811.6          |
| 22   | 0.2790        | 112,176.1                  | \$31,302.1      | \$2,804                         | \$0                                        | (\$2,244)         | \$31,863.0       | \$551,674.5          |
| 23   | 0.2874        | 111,615.2                  | \$32,079.9      | \$2,790                         | \$0                                        | (\$2,232)         | \$32,638.0       | \$584,312.5          |
| 24   | 0.2960        | 111,057.1                  | \$32,877.1      | \$2,776                         | \$0                                        | (\$2,221)         | \$33,432.4       | \$617,745.0          |
| 25   | 0.3049        | 110,501.9                  | \$33,694.1      | \$2,763                         | \$0                                        | (\$2,210)         | \$34,246.6       | \$651,991.6          |

\*REIP program is currently on hold.

The graphic consists of a large light blue rectangle on the left side of the page. A horizontal line extends from the right edge of this rectangle across the page. A vertical line extends from the bottom of the light blue rectangle down to the bottom of the page. These two lines intersect at the bottom right corner of the light blue rectangle, forming an L-shape. The text "Appendix K" is positioned at this intersection point, with the "A" and "K" partially overlapping the light blue area and the "ppendix" part on the white background.

## Appendix K

# WindCad Turbine Performance Model

## Endurance S-343 Wind Turbine, Grid - Intertie

Prepared For: **Wall Township Board of Education**  
Site Location: **Wall, NJ**  
Data Source: **NASA Atmospheric Science Data Center**  
Date: **8/22/2012**

**35 kW**

### Inputs:

Ave. Wind (m/s) = 4.44  
Weibull K = 2  
Site Altitude (m) = 0  
Wind Shear Exp. = 0.180  
Anem. Height (m) = 42.7  
Tower Height (m) = 42.7  
Turbulence Factor = 2.0%

### Results:

Hub Average Wind Speed (m/s) = 4.44  
Air Density Factor = 0%  
Average Output Power (kW) = 8.90  
Daily Energy Output (kWh) = 213.6  
Annual Energy Output (kWh) = **77,954**  
Monthly Energy Output = 6,496  
Percent Operating Time = 61.1%

### Weibull Performance Calculations

| Wind Speed Bin (m/s) | Power (kW) | Wind Probability (f) | Net kW @ V |
|----------------------|------------|----------------------|------------|
| 1                    | 0.00       | 7.72%                | 0.000      |
| 2                    | 0.00       | 13.69%               | 0.000      |
| 3                    | 0.00       | 16.79%               | 0.000      |
| 4                    | 2.45       | 16.90%               | 0.414      |
| 5                    | 7.45       | 14.72%               | 1.096      |
| 6                    | 14.70      | 11.35%               | 1.668      |
| 7                    | 24.50      | 7.85%                | 1.924      |
| 8                    | 35.28      | 4.91%                | 1.733      |
| 9                    | 38.22      | 2.79%                | 1.067      |
| 10                   | 38.22      | 1.45%                | 0.552      |
| 11                   | 38.22      | 0.68%                | 0.261      |
| 12                   | 38.22      | 0.30%                | 0.113      |
| 13                   | 38.22      | 0.12%                | 0.045      |
| 14                   | 38.22      | 0.04%                | 0.016      |
| 15                   | 38.22      | 0.01%                | 0.005      |
| 16                   | 38.22      | 0.00%                | 0.002      |
| 17                   | 38.22      | 0.00%                | 0.000      |
| 18                   | 38.22      | 0.00%                | 0.000      |
| 19                   | 38.22      | 0.00%                | 0.000      |
| 20                   | 38.22      | 0.00%                | 0.000      |
| Totals:              |            | 99.33%               | 8.899      |

#### Weibull Calculations:

Wind speed probability is calculated as a Weibull curve defined by the average wind speed and a shape factor, K. To facilitate piece-wise integration, the wind speed range is broken down into "bins" of 1 m/s in width (Column 1). For each wind speed bin, instantaneous wind turbine power (W, Column 2)) is multiplied by the Weibull wind speed probability (f, Column 3). This cross product (Net W, Column 4) is the contribution to average turbine power output contributed by wind speeds in that bin. The sum of these contributions is the average power output of the turbine on a continuous, 24 hour, basis. Best results are achieved using annual or monthly average wind speeds. Use of daily or hourly average speeds is not recommended.



# WindCad Turbine Performance Model

## Endurance S-343 Wind Turbine, Grid - Intertie

Prepared For: **Wall Township Board of Education**  
Site Location: **Wall, NJ**  
Data Source: **NASA Atmospheric Science Data Center**  
Date: **8/22/2012**

**35 kW**

### Inputs:

Ave. Wind (m/s) = 5.52  
Weibull K = 2  
Site Altitude (m) = 0  
Wind Shear Exp. = 0.180  
Anem. Height (m) = 42.7  
Tower Height (m) = 42.7  
Turbulence Factor = 2.0%

### Results:

Hub Average Wind Speed (m/s) = 5.52  
Air Density Factor = 0%  
Average Output Power (kW) = 14.23  
Daily Energy Output (kWh) = 341.4  
Annual Energy Output (kWh) = **124,628**  
Monthly Energy Output = 10,386  
Percent Operating Time = 72.8%

### Weibull Performance Calculations

| Wind Speed Bin (m/s) | Power (kW) | Wind Probability (f) | Net kW @ V |
|----------------------|------------|----------------------|------------|
| 1                    | 0.00       | 5.07%                | 0.000      |
| 2                    | 0.00       | 9.37%                | 0.000      |
| 3                    | 0.00       | 12.34%               | 0.000      |
| 4                    | 2.45       | 13.72%               | 0.336      |
| 5                    | 7.45       | 13.57%               | 1.011      |
| 6                    | 14.70      | 12.24%               | 1.799      |
| 7                    | 24.50      | 10.18%               | 2.495      |
| 8                    | 35.28      | 7.88%                | 2.780      |
| 9                    | 38.22      | 5.70%                | 2.178      |
| 10                   | 38.22      | 3.86%                | 1.477      |
| 11                   | 38.22      | 2.46%                | 0.941      |
| 12                   | 38.22      | 1.48%                | 0.565      |
| 13                   | 38.22      | 0.84%                | 0.319      |
| 14                   | 38.22      | 0.45%                | 0.170      |
| 15                   | 38.22      | 0.22%                | 0.086      |
| 16                   | 38.22      | 0.11%                | 0.041      |
| 17                   | 38.22      | 0.05%                | 0.018      |
| 18                   | 38.22      | 0.02%                | 0.008      |
| 19                   | 38.22      | 0.01%                | 0.003      |
| 20                   | 38.22      | 0.00%                | 0.001      |

2008, BWC

Totals:

99.56%

14.227

### Weibull Calculations:

Wind speed probability is calculated as a Weibull curve defined by the average wind speed and a shape factor, K. To facilitate piece-wise integration, the wind speed range is broken down into "bins" of 1 m/s in width (Column 1). For each wind speed bin, instantaneous wind turbine power (W, Column 2) is multiplied by the Weibull wind speed probability (f, Column 3). This cross product (Net W, Column 4) is the contribution to average turbine power output contributed by wind speeds in that bin. The sum of these contributions is the average power output of the turbine on a continuous, 24 hour, basis. Best results are achieved using annual or monthly average wind speeds. Use of daily or hourly average speeds is not recommended.

# WindCad Turbine Performance Model

## Endurance S-343 Wind Turbine, Grid - Intertie

Prepared For: **Wall Township Board of Education**  
Site Location: **Wall, NJ**  
Data Source: **NASA Atmospheric Science Data Center**  
Date: **8/22/2012**

**35 kW**

### Inputs:

Ave. Wind (m/s) = 6.41  
Weibull K = 2  
Site Altitude (m) = 0  
Wind Shear Exp. = 0.180  
Anem. Height (m) = 42.7  
Tower Height (m) = 42.7  
Turbulence Factor = 2.0%

### Results:

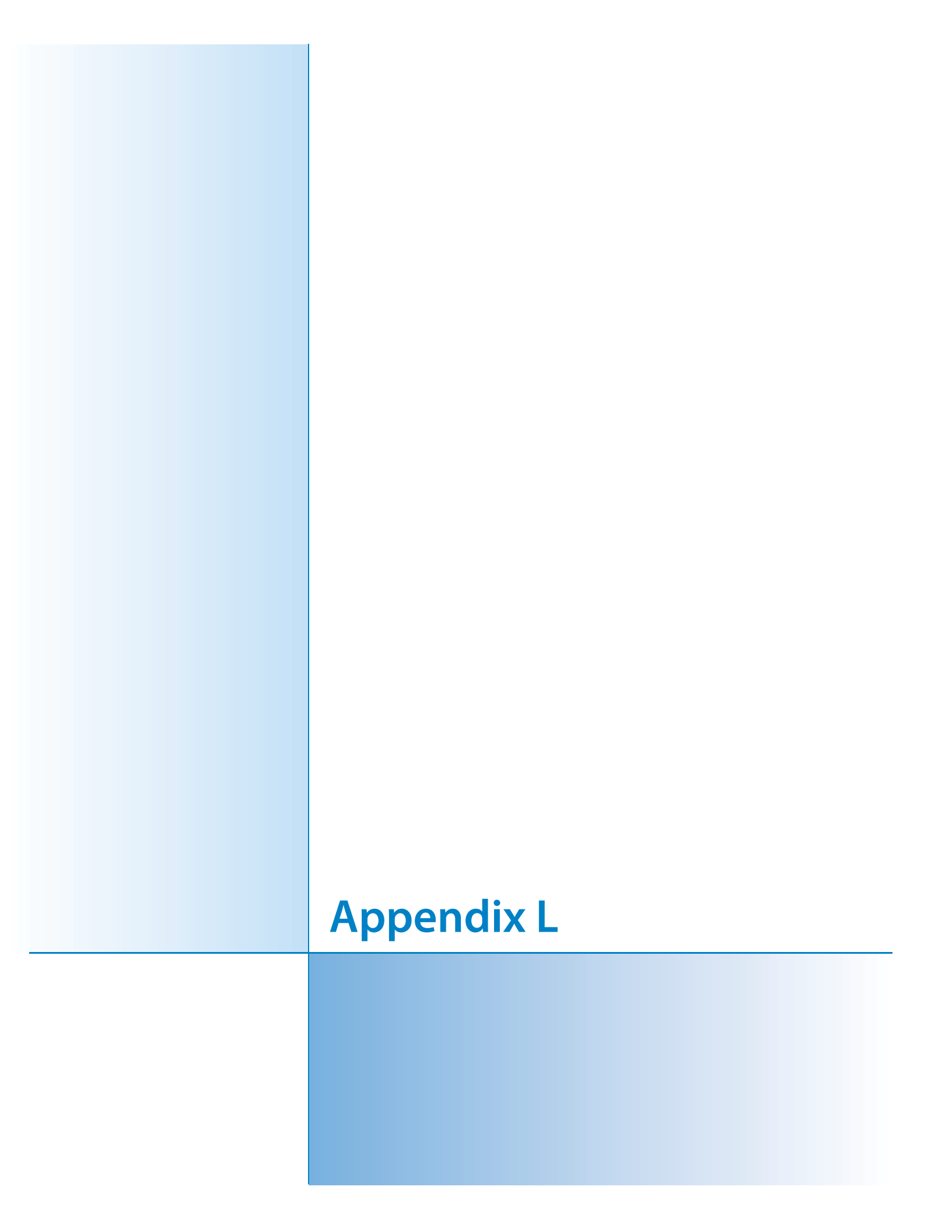
Hub Average Wind Speed (m/s) = 6.41  
Air Density Factor = 0%  
Average Output Power (kW) = 18.06  
Daily Energy Output (kWh) = 433.4  
Annual Energy Output (kWh) = **158,179**  
Monthly Energy Output = 13,182  
Percent Operating Time = 79.0%

### Weibull Performance Calculations

| Wind Speed Bin (m/s) | Power (kW) | Wind Probability (f) | Net kW @ V |
|----------------------|------------|----------------------|------------|
| 1                    | 0.00       | 3.78%                | 0.000      |
| 2                    | 0.00       | 7.14%                | 0.000      |
| 3                    | 0.00       | 9.72%                | 0.000      |
| 4                    | 2.45       | 11.33%               | 0.278      |
| 5                    | 7.45       | 11.91%               | 0.887      |
| 6                    | 14.70      | 11.56%               | 1.699      |
| 7                    | 24.50      | 10.49%               | 2.571      |
| 8                    | 35.28      | 8.98%                | 3.169      |
| 9                    | 38.22      | 7.28%                | 2.783      |
| 10                   | 38.22      | 5.61%                | 2.144      |
| 11                   | 38.22      | 4.12%                | 1.573      |
| 12                   | 38.22      | 2.88%                | 1.101      |
| 13                   | 38.22      | 1.93%                | 0.737      |
| 14                   | 38.22      | 1.23%                | 0.472      |
| 15                   | 38.22      | 0.76%                | 0.289      |
| 16                   | 38.22      | 0.44%                | 0.170      |
| 17                   | 38.22      | 0.25%                | 0.095      |
| 18                   | 38.22      | 0.13%                | 0.051      |
| 19                   | 38.22      | 0.07%                | 0.027      |
| 20                   | 38.22      | 0.03%                | 0.013      |
| 2008, BWC            | Totals:    | 99.65%               | 18.057     |

#### Weibull Calculations:

Wind speed probability is calculated as a Weibull curve defined by the average wind speed and a shape factor, K. To facilitate piece-wise integration, the wind speed range is broken down into "bins" of 1 m/s in width (Column 1). For each wind speed bin, instantaneous wind turbine power (W, Column 2)) is multiplied by the Weibull wind speed probability (f, Column 3). This cross product (Net W, Column 4) is the contribution to average turbine power output contributed by wind speeds in that bin. The sum of these contributions is the average power output of the turbine on a continuous, 24 hour, basis. Best results are achieved using annual or monthly average wind speeds. Use of daily or hourly average speeds is not recommended.

The graphic consists of a large, light blue rectangle in the top-left corner and a smaller, medium blue rectangle in the bottom-right corner. A thin blue line runs vertically from the top of the page to the bottom, and a thin blue line runs horizontally from the left edge to the right edge, intersecting at the bottom-left corner of the medium blue rectangle. The text "Appendix L" is positioned to the right of the vertical line, centered vertically between the horizontal line and the top of the page.

## Appendix L

CLEAN ENERGY... JUST PLUG IT IN

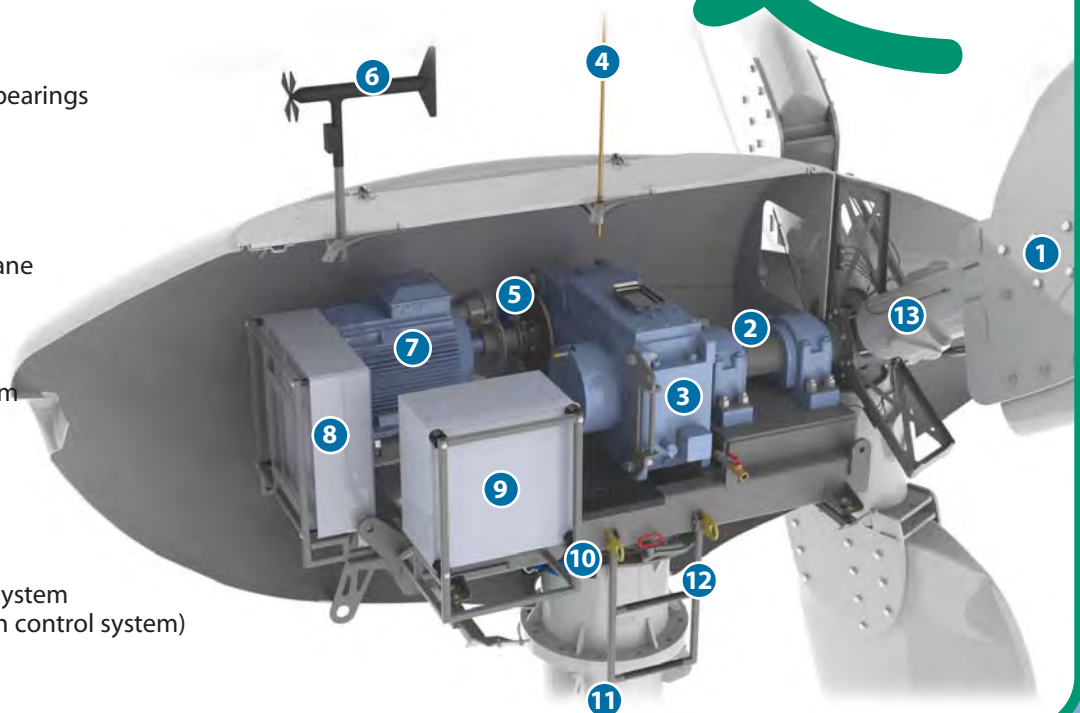
**Endurance**  
wind power

**G-3120**



## G-3120 35 kW model

- 1 9 m blade
- 2 Main shaft with two bearings
- 3 Gearbox
- 4 Lightning protection
- 5 Disk brake
- 6 Anemometer wind vane
- 7 Generator
- 8 Control panel
- 9 Braking control system
- 10 Passive yaw control with brake
- 11 Tower
- 12 Access ladder
- 13 Aerodynamic safety system (patent pending pitch control system)



ENDURANCE WIND TURBINES GREEN ENERGY THAT WORKS

# SPECIFICATIONS

# G-3120

## TURBINE

|                      |                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------|
| Configuration        | 3 blades, horizontal axis, downwind                                                       |
| Rated power @ 11 m/s | 35 kW                                                                                     |
| Applications         | Direct grid-tied                                                                          |
| Rotor speed          | 36 rpm                                                                                    |
| Cut-in wind speed    | 3.5 m/s (7.8 mph)                                                                         |
| Cut-out wind speed   | 25 m/s (56 mph)                                                                           |
| Survival wind speed  | 52 m/s (116 mph)                                                                          |
| Design lifetime      | 30 years *                                                                                |
| Overall weight       | 4,130 kg (9,105 lbs) - single phase turbine<br>3,850 kg (8,488 lbs) - three phase turbine |

## ROTOR

|                  |                                             |
|------------------|---------------------------------------------|
| Rotor diameter   | 19.2 m (63 ft)                              |
| Swept area       | 290 m <sup>2</sup> (3,120 ft <sup>2</sup> ) |
| Blade length     | 9 m (29.5 ft)                               |
| Blade material   | Fiberglass / Epoxy                          |
| Power regulation | Stall control (constant speed)              |

## GENERATOR

|           |                                           |
|-----------|-------------------------------------------|
| Frequency | 60 Hz                                     |
| Voltage   | 240 V - single phase; 480 V - three phase |
| Phase     | Single phase and three phase              |
| Type      | Induction generator                       |

## BRAKE & SAFETY SYSTEMS

|                                    |                                                                                                                                                         |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main brake system                  | Rapid fail-safe brake on high speed shaft                                                                                                               |
| Secondary safety system            | Pitch control system (for over speed regulation) using passive spring loaded mechanism (patent pending)                                                 |
| Automatic shut down triggered by : | <ul style="list-style-type: none"> <li>- Over speed</li> <li>- High wind speed</li> <li>- Grid failure</li> <li>- All other fault conditions</li> </ul> |

## CONTROLS

|           |                                     |
|-----------|-------------------------------------|
| PLC based | Includes remote monitoring software |
|-----------|-------------------------------------|

## WARRANTY

|                   |         |
|-------------------|---------|
| Turbine, controls | 5 years |
|-------------------|---------|

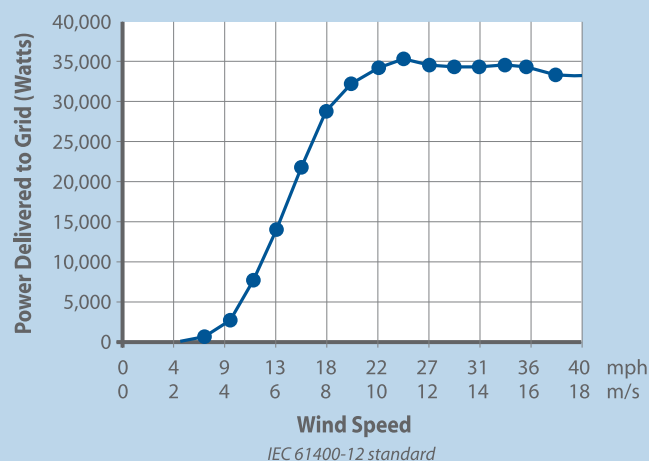
## TOWERS

|                    |                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------|
| Types and heights  | Standard Monopole 30.5 m (100 ft)<br>Standard Lattice 42.7 m (140 ft)<br>Custom heights available |
| Maintenance Access | Working space inside the nacelle<br>Top work platform and safety cable climbing system            |

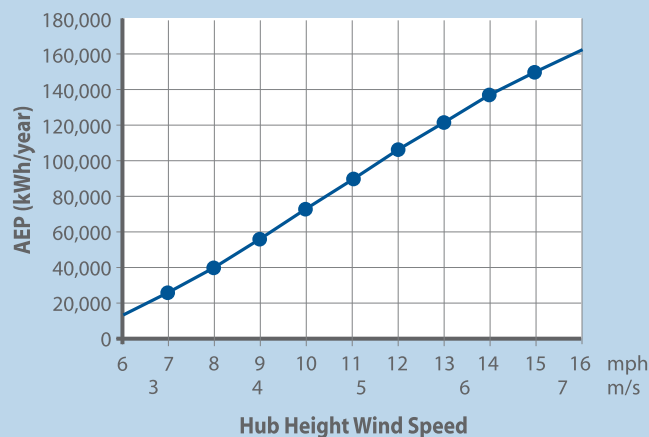
\*Provided service and maintenance schedules are strictly followed



## POWER CURVE

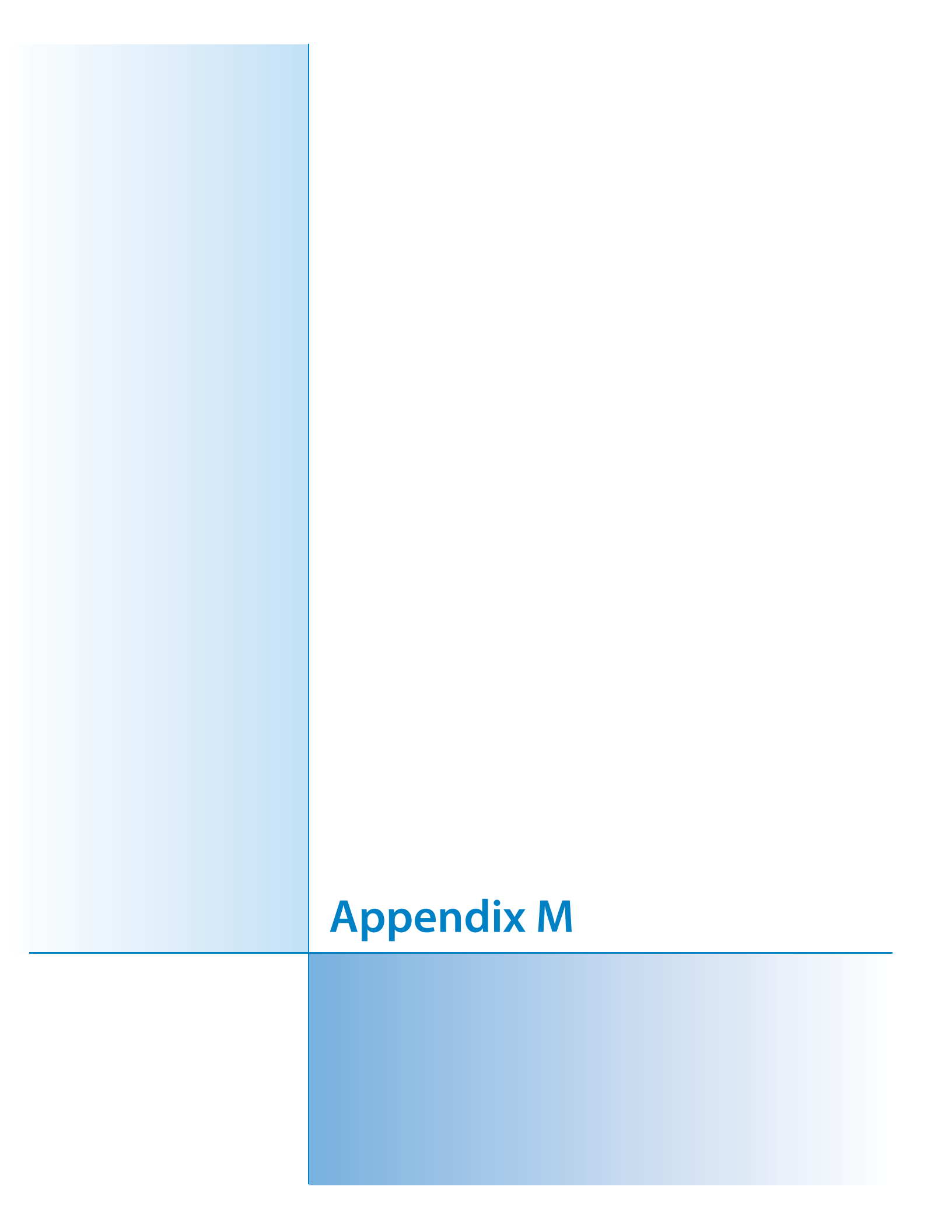


## ANNUAL ENERGY PRODUCTION (AEP)



## WIND SPEED CONVERSION TABLE

| m/s  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 12 | 14 | 25 | 32  | 45  |
|------|----|----|----|----|----|----|----|----|----|----|-----|-----|
| km/h | 14 | 18 | 22 | 25 | 29 | 32 | 36 | 43 | 50 | 90 | 125 | 160 |
| mph  | 9  | 11 | 13 | 16 | 18 | 20 | 22 | 27 | 31 | 56 | 80  | 100 |

The graphic consists of a large, light blue rectangle in the top-left corner and a smaller, medium blue rectangle in the bottom-right corner. These two rectangles overlap at a central point. A thin blue line runs vertically from the top edge of the page down to the intersection point, and another thin blue line runs horizontally from the left edge of the page to the same intersection point. The text "Appendix M" is positioned at this intersection point, with the "A" and "M" partially overlapping the light blue rectangle and the "ppendix" partially overlapping the medium blue rectangle.

## Appendix M

| Central Elementary |               |                  |              |                  |                      |                       |                           |
|--------------------|---------------|------------------|--------------|------------------|----------------------|-----------------------|---------------------------|
| Description        | Unit Location | Service Location | Manufacturer | Model            | Estimated Efficiency | Estimated Age (Years) | Notes                     |
| BOILER ROOM        | BOILER        | HEAT             | SMITH        | 450L 12 SECTION  | 80%                  | 30+                   | 248 MBH STEAM             |
| BOILER ROOM        | BOILER        | HEAT             | SMITH        | 450 L 12 SECTION | 80%                  | 30+                   | 248 MBH STEAM             |
| CONDENSER          |               |                  | TRANE        | TTP042C100A4     |                      | 3                     | 3.5 TONS                  |
| CONDENSER          | ROOF          |                  | TRANE        | TTP018C100A2     |                      |                       |                           |
| RTU                | ROOF          | CAFETERIA        | MCQUAY       | NO TAG           |                      | 13                    | 10 TONS                   |
| CONDENSER          | ROOF          | CAFETERIA        | MCQUAY       | ACZ010AC12ER11   |                      |                       |                           |
| AHU                | ROOF          | MPR              | TRANE        | YCD180B3LAEA     |                      | 13                    | 15 TONS<br>250 MBH<br>GAS |
| AHU                | ROOF          | STAGE            | TRANE        | YCD060C3LABF     |                      | 13                    | 5 TONS 90<br>MBH GAS      |

| Wall Township Intermediate |               |                  |              |                |                      |                       |                             |
|----------------------------|---------------|------------------|--------------|----------------|----------------------|-----------------------|-----------------------------|
| Description                | Unit Location | Service Location | Manufacturer | Model          | Estimated Efficiency | Estimated Age (Years) | Notes                       |
| UV                         |               |                  | TRANE        |                |                      | 14                    | ALL CLASSROOM               |
| CONDENSER                  | ROOF          |                  | SANYO        | C0911          |                      | NEW                   | ¾ TON                       |
| CONDENSER                  | ROOF          |                  | TRANE        | 2TTB3030       |                      | 13                    | 2 ½ TONS                    |
| AHU                        | ROOF          |                  | LENNOX       | LGA072HHIG     |                      | 13                    | 6 TONS 125<br>MBH GAS       |
| AHU                        | ROOF          |                  |              | LGA088H G      |                      | 13                    | 7 TONS 125<br>MBH GAS       |
| AHU                        | ROOF          |                  | AAON         | RK-15-3-EO-332 |                      | 13                    | 15 TONS<br>332 MBH<br>INPUT |
| AHU                        | ROOF          |                  | AAON         | RK-20-3-00-322 |                      |                       | 20 TONS<br>332 MBH<br>INPUT |
| CONDENSER                  | GROUND        |                  |              |                |                      | 13                    | 2 TONS                      |
| AHU                        | ROOF          |                  | LENNOX       | LGA120HHIG     |                      | 13                    | 10 TONS<br>235 MBH          |
| AHU                        | ROOF          |                  | LENNOX       | LGA088HHIG     |                      | 13                    | 7 TONS 125<br>MBH           |
| AHU                        | ROOF          |                  | LENNOX       | LGA048H G      |                      | 13                    | 4 TONS                      |
| AHU                        | ROOF          | LIBRARY          | LENNOX       | LCA180HNIG     |                      | 13                    | 15 TONS                     |
| AHU                        | ROOF          |                  | TRANE        |                |                      | 14                    | TAG GONE<br>~ 3 TONS        |
| AHU                        | ROOF          |                  | LENNOX       | LGA0365516     |                      | 13                    | 3 TONS 78<br>MBH            |
| AHU                        | ROOF          |                  | LENNOX       | LGA04211516    |                      | 16                    | 3 ½ TONS<br>78 MBH          |

|           |        |           |        |                |         |    |                        |
|-----------|--------|-----------|--------|----------------|---------|----|------------------------|
| AHU       | ROOF   | C-WING    |        | DX TAG GONE    |         | 22 |                        |
| AHU       | ROOF   | RM 321    | TRANE  |                |         |    |                        |
| HVU       | ROOF   |           | REZHOR | NO TAG         |         |    | NO AC<br>HEAT ONLY     |
| AHU       | ROOF   |           | LENNOX | LG060HSIG      |         | 13 | 5 TONS 78<br>MBH       |
| AHU-1     | ROOF   | CAFETERIA | MCQUAY | RDS802CLY      |         |    |                        |
| CONDENSER | ROOF   | CAFETERIA | MCQUAY | ACZ040AS27ERI0 |         |    | 40 TONS                |
| AHU       | ROOF   | CAFETERIA | LENNOX | LCA156HVG      |         | 13 | 13 TONS                |
| AHU       | ROOF   | GYM       | LENNOX | LGA300HHIG     |         | 13 | 25 TONS<br>470 MBH     |
| BOILER 1  | BOILER | HEAT      | SMITH  | 4500AMILLS     | 80%     | 13 | 4025 MBH<br>5856 INPUT |
| BOILER 2  | BOILER | HEAT      | SMITH  | 4500AMILLS     | 80%     | 13 | 4025 MBH<br>5856 INPUT |
| DWH       |        |           | PVI    | 500 P 250A-TP  | 250 GAL | 13 | 400 MBH                |



# Wall Township High School

| Description | Unit Location   | Service Location         | Manufacturer   | Model            | Estimated Efficiency | Estimated Age (Years) | Notes                          |
|-------------|-----------------|--------------------------|----------------|------------------|----------------------|-----------------------|--------------------------------|
| BOILER 1    | BOILER ROOM     | HEAT                     | SMITH          | 450MILLS         | 75%                  | 53                    | 3588 MBH                       |
| BOILER 2    | BOILER ROOM     | HEAT                     | SMITH          | 450MILLS         | 75%                  | 53                    | 3588 MBH                       |
| BOILER 3    | BOILER ROOM     | HEAT                     | SMITH          | 450MILLS         | 75%                  | 53                    | 3588 MBH                       |
| CAFETERIA   | ROOF            | CAFETERIA                | YORK           | DIEGI80N24046    |                      | 12                    | 300 MBH GAS INPUT 15 TONS COOL |
| AHU 1       | GYM             | GYM                      |                | HEAT & VENT      |                      |                       | 3 WAY HEATING                  |
| AHU 2       | GYM             | GYM                      |                | PRESENTLY NOT    |                      |                       | 3 WAY HEATING                  |
| AUH 3       | GYM             | GYM                      |                | CONTROLLED       |                      |                       | 3 WAY HEATING                  |
| AHU 4       | GYM             | GYM                      |                |                  |                      |                       | 3 WAY HEATING                  |
| AHU 5       | GYM             | GYM                      |                |                  |                      |                       | 3 WAY HEATING                  |
| AHU 6       | GYM             | GYM                      |                |                  |                      |                       | 3 WAY HEATING                  |
| SPLIT AC    | WOMENS COACH RM | WOMENS COACH RM          | MITSU          | MR SLIM          |                      |                       |                                |
| APLIT AC    | SAFETY OFFICE   | SAFETY OFFICE            | FUJITSU        |                  | 26 EER               |                       |                                |
| HVACU       | WEIGHT ROOM     | WEIGHT ROOM              |                | JOHNSON CONTROLS |                      |                       | ~3000 CFU                      |
| HVACU       | WEIGHT ROOM     | WEIGHT ROOM              |                |                  |                      |                       | ~3000 CFU                      |
| HVACU       | STORAGE         | SCHOOL STORE LOCKER ROOM |                |                  |                      |                       |                                |
| BOILERS     | NORTH BOILER    | NORTH                    | WEIL MCLAIN    | P-888-W          | 80%                  | 16                    | 1656 MBH                       |
| CONDENSER   | ROOF            |                          | LENNOX         | 12ACB30-4P       |                      |                       | 2.5 TONS                       |
| CONDENSER   | ROOF            |                          | LENNOX         | 12ACB24-4P       |                      |                       | 2 TONS                         |
| CONDENSER   | ROOF            |                          | LENNOX         | HS26-018-2P      |                      |                       | 1.5 TONS                       |
| CONDENSER   | ROOF            |                          | LENNOX         | HS29-012-2P      |                      |                       | 1 TON                          |
| CONDENSER   | ROOF            |                          | LENNOX         | 12ACB48-4P       |                      |                       | 4 TONS                         |
| CONDENSER   | ROOF            | AUDITORIUM               | LENNOX         | 12ACB42-4P       |                      |                       | 3 ½ TONS                       |
| CONDENSER   | ROOF            |                          | LENNOX         | LSAA24OC-1G      |                      |                       | 20 TONS                        |
| CONDENSER   | ROOF            |                          | LENNOX         | LSA072C-1Y       |                      |                       | 6 TONS                         |
| CONDENSER   | ROOF            | MAIN OFFICE              | FRASER         | HS29-120-3Y      |                      |                       | 10 TONS                        |
| CONDENSER   | ROOF            |                          |                | DBHB-T120-AA     |                      | 20                    | 10 TONS                        |
|             | ROOF            |                          | MITSU          | PU12EK           |                      |                       | 1 TON                          |
|             |                 |                          | MISTU          | PU36EK           |                      |                       | HEAT PUMP                      |
| DWH         |                 |                          | CONVERTER FROM | HEATING BOILER   | 1000 GAL             | 52                    |                                |

|     |                |  |          |           |          |    |               |
|-----|----------------|--|----------|-----------|----------|----|---------------|
| DWH | NORTH BATHROOM |  | AO SMITH | LW500-920 | 1000 GAL | 16 | 500 MBH INPUT |
|-----|----------------|--|----------|-----------|----------|----|---------------|

| Allenwood   |                  |                  |              |                |                      |                       |                           |
|-------------|------------------|------------------|--------------|----------------|----------------------|-----------------------|---------------------------|
| Description | Unit Location    | Service Location | Manufacturer | Model          | Estimated Efficiency | Estimated Age (Years) | Notes                     |
| AC SPLIT    | 20               | 20               | MITSU        | M52-D36NA      |                      | 9                     | 3 TONS                    |
| BOILER 1    | BOILER           | HEAT             | CB           | CB-100-102     | 80%                  | 23                    | 4000 MBH<br>FEW BAD TUBES |
| BOILER 2    | BOILER           | HEAT             | SMITH        | 28A-10         | 80%                  | 12                    | 3172 MBH                  |
| AC SPLIT    | 19               | 19               | MITSU        | M2Z-D36NA      |                      | 9                     | 3 TONS                    |
| AC SPLIT    | ART CEILING      | MUSIC            |              |                |                      |                       |                           |
| AC SPLIT    | ART CEILING      | ART              |              |                |                      |                       |                           |
| AC          | DATA             | DATA             | SANYO        | K51251         |                      | 9                     | 1 TONS                    |
| AHU         | MAIN OFFICE      |                  | NESBIT       |                |                      |                       | HEAT ONLY<br>1.5 HP FAN   |
| AC          | 10               | 10               | FUJITSU      | ASU30CLX       |                      | 2                     | 2.5 TONS                  |
| AC          | 1-9              | 1-9              | MITSU        | MSY-D36NA      |                      |                       |                           |
| AC          | ROOF             |                  | TRANE        | TTP018C10CA2   |                      | 13                    | 1.5 TONS                  |
| AC          | ROOF             |                  | TRANE        | TTP048D100A0   |                      | 13                    | 4 TONS                    |
| AC          | ROOF             |                  | TRANE        | TTP024D100A0   |                      |                       |                           |
|             |                  |                  | TRANE        | BIG & OLD      |                      |                       | VENT HEAT ONLY            |
|             |                  |                  | TRANE        | BIG & OLD      |                      |                       | HEAT AC VENT              |
| CONDENSER   |                  |                  | MCQUAY       | ACZ010AC12-ERM |                      |                       | 10 TONS                   |
| DPW         | BOILER ROOM      |                  | AO SMITH     | EES80917       | 80                   | 8                     | 4500 W                    |
| DPW         | CUSTODIAN CLOSET |                  | AO SMITH     | DEL30104       | 30                   | 8                     | 1500 W                    |

| Old Mill Elementary |               |                  |                   |                  |                      |                       |                  |
|---------------------|---------------|------------------|-------------------|------------------|----------------------|-----------------------|------------------|
| Description         | Unit Location | Service Location | Manufacturer      | Model            | Estimated Efficiency | Estimated Age (Years) | Notes            |
| AC SPLIT            | GROUND        | 100              | LENNOX            | 12ACB42-4P       |                      | 13                    | 3.5 TONS         |
| AC SPLIT            | GROUND        | 252              | THERMAL ZONE      | T2AA330-2A       |                      |                       | 3 TONS           |
| AC SPLIT            | GROUND        | 104              | LENNOX            | 12ACB42-4P       |                      | 13                    | 2.5 TONS         |
| AC SPLIT            |               |                  | AMERICAN STANDARD |                  |                      |                       | 2 TONS           |
| AC SPLIT            |               |                  | AMERICAN STANDARD |                  |                      |                       | 1 TON            |
| HV UNIT             | GYM           | GYM              | HERMAN NELSO      | CEILING MOUNT    |                      |                       | PNEUMATIC        |
| BOILER 1            | BOILER ROOM   | HEAT             | HB SMITH          | 450MILLS 20 SECT |                      | 52                    | 350 MBH HOTWATER |
| BOILER 2            | BOILER ROOM   | HEAT             | HB SMITH          | 450MILLS 20 SECT |                      | 52                    | 350 MBH HOTWATER |
| GENERATOR           |               |                  | ONAN              | 30EK             |                      | 52                    | 30 KW            |
| AHU                 | RECEIVER      |                  | TRANE             | TAG FADED        |                      |                       | COOLING W/REHEAT |
| SPLIT AC            | TECH OFFICE   | TECH OFFICE      | SANYO             | KS1251           |                      | 9                     |                  |
| CONDENSER           | ROOF          |                  | LENNOX            | 12ACB30-4P       |                      | 13                    | 2.5 TONS         |
| CONDENSER           | ROOF          |                  | LENNOX            | LSA0T2C-1T       |                      | 13                    | 6 TONS           |
| CONDENSER           | ROOF          |                  | DUCANE            | AC10BIC-B        |                      | 12                    | 3 TONS           |
| CONDENSER           | ROOF          | NURSE            | COLEMAN           | HABA-10602       |                      | 12                    | 5 TONS           |
| CONDENSER           | ROOF          | MAIN OFFICE      | TRANE             | ITA090A300CB     |                      | 9                     | 7.5 TONS         |
| DWH                 | BOILER ROOM   |                  | RUUD              | G 100-80         | 95 GAL               | NEW                   | 80 MBH 80%       |