BURLINGTON CITY PUBLIC SCHOOLS

BURLINGTON CITY HIGH SCHOOL

100 Blue Devil Way, Burlington NJ 08016

LOCAL GOVERNMENT ENERGY AUDIT PROGRAM
FOR
NEW JERSEY
BOARD OF PUBLIC UTILITIES

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CHA PROJECT NO. 28886

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REPORT DISCLAIMER

This audit was conducted in accordance with the standards developed by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) for a Level II audit. Cost and savings calculations for a given measure were estimated to within ±20%, and are based on data obtained from the owner, data obtained during site observations, professional experience, historical data, and standard engineering practice. Cost data does not include soft costs such as engineering fees, legal fees, project management fees, financing, etc.

A thorough walkthrough of the building was performed, which included gathering nameplate information and operating parameters for all accessible equipment and lighting systems. Unless otherwise stated, model, efficiency, and capacity information included in this report were collected directly from equipment nameplates and /or from documentation provided by the owner during the site visit. Typical operation and scheduling information was obtained from interviewing staff and spot measurements taken in the field.

List of Common Energy Audit Abbreviations

- A/C – Air Conditioning
- AHS – Air Handling Unit
- BMS – Building Management System
- Btu – British thermal unit
- CDW – Condenser Water
- CFM – Cubic feet per minute
- CHW – Chilled Water
- DCV – Demand Control Ventilation
- DDC – Direct Digital Control
- DHW – Domestic Hot Water
- DX – Direct Expansion
- EER – Energy Efficiency Ratio
- EF – Exhaust Fan
- EUI – Energy Use Intensity
- Gal – Gallon
- GPD – Gallons per day
- GPF – Gallons Per Flush
- GPH – Gallons per hour
- GPM – Gallons per minute
- GPS – Gallons per second
- HHW – Heating Hot Water
- HID – High Intensity Discharge
- HP – Horsepower
- HRU – Heat Recovery Unit
- HVAC – Heating, Ventilation, Air Conditioning
- HX – Heat Exchanger
- kbtu/mbtu – One thousand (1,000) Btu
- kW – Kilowatt (1,000 watts)
- kWh – Kilowatt-hours
- LED – Light Emitting Diode
- mbh – Thousand Btu per hour
- mmbtu – One million (1,000,000) Btu
- OCC – Occupancy Sensor
- PSI – Pounds per square inch
- RTU – Rooftop Unit
- SBC – System Benefits Charge
- SF – Square foot
- UH – Unit Heater
- V – Volts
- VAV – Variable Air Volume
- VSD – Variable Speed Drive
- W – Watt

1.0 EXECUTIVE SUMMARY

This report summarizes the energy audit performed by CHA for Burlington City Public Schools in connection with the New Jersey Board of Public Utilities (NJBPU) Local Government Energy Audit (LGEA) Program. The purpose of this report is to identify energy savings opportunities associated with major energy consumers and inefficient practices. Low-cost and no-cost are also identified during the study. This report details the results of the energy audit conducted for the building listed below:

Building Name	Address	Square Feet	Construction Date
Burlington City High School	100 Blue Devil Way, Burlington NJ 08016	207,701	1956, 1967 and 2007

The potential total annual energy and cost savings for the recommended energy conservation measures (ECM) identified in the survey are shown below:

Building Name	Electric Savings (kWh)	NG Savings (therms)	Total Savings ($)	Payback (years)
Burlington City High School	507,892	14,270	$ 90,437	11.2

Each individual measure's annual savings are dependent on that measure alone, there are no interactive effects calculated. There are three options shown for Lighting ECM savings; only one option can be chosen. Incentives shown (if any) are based only on the SmartStart Incentive Program. Other NJBPU or local utility incentives may also be available/ applicable and are discussed in Section 6.0.

Each measure recommended by CHA typically has a stand-alone simple payback period of 15 years or less. However, if the owner choses to pursue an Energy Savings Improvement Plan (ESIP), high payback measures could be bundled with lower payback measures which ultimately can result in a payback which is favorable for an ESIP project to proceed. Occasionally, we will recommend an ECM that has a longer payback period, based on the need to replace that piece(s) of equipment due to its age, such as a boiler for example.

The following table provides a detailed summary of each ECM for the building surveyed, including costs, savings, SmartStart incentives and payback.

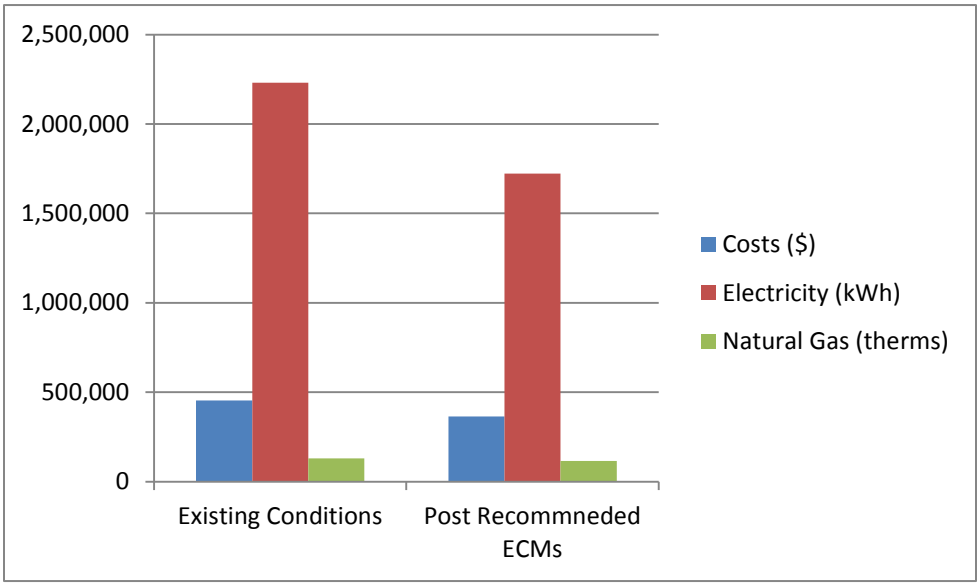
Summary of Energy Conservation Measures

ECM #	Energy Conservation Measure	Est. Costs ($)	Est. Savings ($/year)	Payback w/o Incentive	Potential Incentive ($)*	Payback w/ Incentive	Recommended
ECM-1	Replace Gym AHUs with Heat Recovery RTUs	119,086	6,941	17.2	1,950	16.9	Y
ECM-2	Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs	16,000	1,499	10.7	0	10.7	Y
ECM-3	Install a Central Web-Based DDC System for all Schools and Integrate the Existing Individual DDC System	157,638	4,835	32.6	3,500	31.9	Y
ECM-4	Replace Domestic Hot Water Heaters with Condensing DHW Heater	24,698	1,204	20.5	2,000	18.8	Y
ECM-5	Install Variable Speed Kitchen Hood Exhaust System	42,073	3,342	12.6	0	12.6	Y
ECM-6	Install Control on the Walk-in Fridges and Freezers	20,625	940	21.9	0	21.9	Y
ECM-7	Replace Dishwasher Electric Booster Heater With Gas Booster Heater	19,000	485	39.2	4,200	30.5	Y
ECM-L1**	Lighting Replacements / Upgrades	608,259	70,003	8.7	0	8.7	N
ECM-L2**	Install Lighting Controls (Add Occupancy Sensors)	9,950	3,908	2.5	1,310	2.5	N
ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	618,208	71,192	8.7	1,310	8.7	Y
Total**		1,017,327	90,437	11.2	12,960	11.1	
Total(Recommended)		1,017,327	90,437	11.2	12,960	11.1	

* Incentive shown is per the New Jersey SmartStart Program.
** These ECMs are not included in the Total, as they are alternate measures not recommended.

If Burlington City Public Schools implements the recommended ECMs, energy savings would be as follows:

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs ($)	453,870	363,433	20%
Electricity (kWh)	2,230,474	1,722,582	23%
Natural Gas (therms)	129,134	114,864	11%
Site EUI (kbtu/SF/Yr)	98.8	83.6	



2.0 BUILDING INFORMATION AND EXISTING CONDITIONS

The following is a summary of building information related to HVAC, plumbing, building envelope, lighting, kitchen equipment and domestic hot water systems as observed during CHAs site visit. See appendix B for detailed information on mechanical equipment, including capacities, model numbers and age. See appendix F for some representative photos of some of the existing conditions observed while onsite.

Building Name: Burlington City High School
Address: 100 Blue Devil Way, Burlington NJ 08016
Gross Floor Area: 207,701
Number of Floors: 2
Year Built: 1956, 1967 and 2007

Building Envelope

Description of Spaces: This is an academic and office building which has office rooms, classrooms, auditorium, gymnasium, media center, cafeteria, computer labs and restrooms.
Description of Occupancy: The facility serves about 712 students from grade 7 to grade 12. There are about 130 school faculty and staff members.
Number of Computers: The building has approximately 500 desktop and laptop computers.
Building Usage: Operates approximately 51 weeks per year and about 100 hours per week.
Construction Materials: Structural steel, brick and concrete block.
Façade: Brick.

Roof: The building has a flat roof which is covered with grey rubber membrane. It is believed that the roof is well insulated. The roof is in good condition and no ECMs associated with roof replacement.
Windows: The windows throughout the building are double pane aluminum framed windows. Windows are in good condition and no ECMs associated with window replacement were evaluated.
Exterior Doors: Exterior doors throughout the school are Alumina frame with double pane safety glass. Sweeps on exterior doors are still in good condition except one side door. Therefore, no ECMs associated with exterior doors were evaluated.

Heating Ventilation & Air Conditioning (HVAC) Systems

Heating: Three Aerco Benchmark 2.0 high efficiency condensing boilers are used to provide heating hot water for the heating coils in the AHUs and unit ventilators (UV). The boilers have a rated 2,000 MBH input with efficiency ranging from 87% to 96% depending on the return water temperature. The building is heated by a four-pipe heating/cooling system. The heating hot water (HHW) is circulated by two pumps driven by 20 HP premium efficiency motors. These two HHW pump motors are equipped with variable frequency drives (VFD). There are (19) ANNEXAIR air handling units (AHU) serving the building. The details of these units are listed as below:

Each of the AHUs has a heat recovery wheel to recover the energy from the exhaust air and reduce energy consumption. The supply fan motors and return fan motors of these AHUs are equipped with VFDs working with the VAV system to reduce energy during part load condition. In addition to the AHUs, there are a few fan coil units (FCU) used in the stairwells, lobbies and common areas. The mechanical rooms have HHW unit heaters to maintain the room temperature during winter season. The kitchen area has a Reznor AHU equipped with gas fired furnace to provide the heating. The capacity of this small AHU is unknown due to missing nameplate.

Cooling: Two 200 ton Carrier air cooled chillers located on the ground outside provide the chilled water for the CHW coils in the AHUs and fan coil units mentioned in the heating section. The chilled water is circulated by two chilled water pumps driven by 20 HP motors which are equipped with VFDs. Apart from the central chilled water system, there are three split DX units serving the IDF rooms. Each of the DX unit has about 1 ton cooling capacity.

The heating/cooling system in this building is new and still very efficient, therefore, there is no ECM associated with the heating/cooling system.

Ventilation: Each of the ten AHUs has air intake to provide fresh air for the areas indicated in the following table. It was noted that all the AHUs have VAV distribution systems except gymnasium, cafeteria and auditorium which adjust the VFD speed according to the room temperature.

Name	Supply Air CFM	Serving Area:
AHU-1	4400 CFM	Classrooms
AHU-2	12800 CFM	Auditorium
AHU-3	4400 CFM	Classrooms

AHU-4	4400 CFM	Office
AHU-5	4400 CFM	Cafeteria
AHU-6	12800 CFM	Gymnasium
AHU-7	4400 CFM	Classrooms
AHU-8	4400 CFM	Classrooms
AHU-9	9600 CFM	Office
AHU-10	4400 CFM	Lobbies and Common Areas

The occupancy of gymnasium, cafeteria and auditorium varies, therefore, an ECM related to installing CO2 sensors and program demand ventilation control for AHU-2,5 and 6 is evaluated.

Exhaust: This building has multiple fractional HP exhaust fans serving restrooms and general exhaust all located on the roof. The kitchen area has three exhaust fans: one for the kitchen general exhaust, one for kitchen hood and one for the dishwasher. The fans are enclosed and therefore the capacities of fan motors are unknown. An ECM related to installing various air volume system for the kitchen hood exhaust is evaluated.

Controls Systems

This building has a Carrier Comfort Network central direct digital control (DDC) system. The Carrier DDC system controls HHW temperature, chilled water temperature, VFD speeds and temperature in each room. After reviewing the control screens and discussing with the school staff, it was noted that the space temperature is typically set at 72 ^{o}F. The system has a temperature setback program to reset the room temperature to 62 ^{o}F during heating season and 80 ^{o}F during cooling season. Currently, this Carrier DDC system only controls the HVAC devices in this school and the school is interested in installing a campus wide central system that monitor all five school buildings. Therefore, an ECM related to upgrade the existing control system to a campus wide central system and re-commissioned the control system has been included.

Domestic Hot Water Systems

This building has a Raypak gas fired DHW heater located in the mechanical room. The heater has a rated 399 MBH heating capacity. This heater provides domestic hot water for kitchen and the whole building. An ECM is associated with replacing the DHW heater with a condensing water heater is evaluated.

Kitchen Equipment

Kitchen equipment includes three (3) reach-in refrigerators, two (2) reach-in freezer, one walk-in refrigerator and one walk-in freezer. There is a dishwasher in the kitchen. The dishwasher has Hatco electric booster water heater which has a rated heating capacity of 6 kW. The kitchen also has ovens, stoves and a 2’ by 10’ kitchen hood. The kitchen equipment is less than 8 years old and appears to be in good condition. It is suggested that Energy Star kitchen equipment be used to replace them when they reach the end of their useful lifespan. A walk-in refrigerator/freezer controller is evaluated in the ECM section.

Plug Load

This building has computers, residential appliances (microwave, refrigerator), and printers which contribute to the plug load in the building. The school usually turn off the appliances when leave the school. Therefore, no ECMs are associated with plug load.

Plumbing Systems

The building is constructed in 2007 and the restrooms contain new style toilets and urinals that are low volume plumbing fixtures. The sink faucets appear to have low-flow type aerators. Therefore, no ECMs is associated with plumbing systems.

Lighting Systems

The building has a mixture of 32W T-8 fluorescent lighting and CFLs lights. The majority of lighting fixtures are T-8 fluorescent U-shape and linear fixtures. The exterior lights are wall mounted metal halides and CFL lights fixtures. This building has a central lighting control system which turns off all the lights except safety lights at midnight and turn on the lights at 7:00AM. The timer system override the switches, therefore, the lights cannot be turned on if someone came in earlier than 7:00AM. Therefore, it is suggested to replace the timer system with occupancy sensors. We have provided three alternatives for lighting that include adding occupancy sensors to the existing lights, replacing the lights with LED lights and a third ECM that evaluates adding occupancy sensors to the proposed LED lights.

3.0 UTILITIES

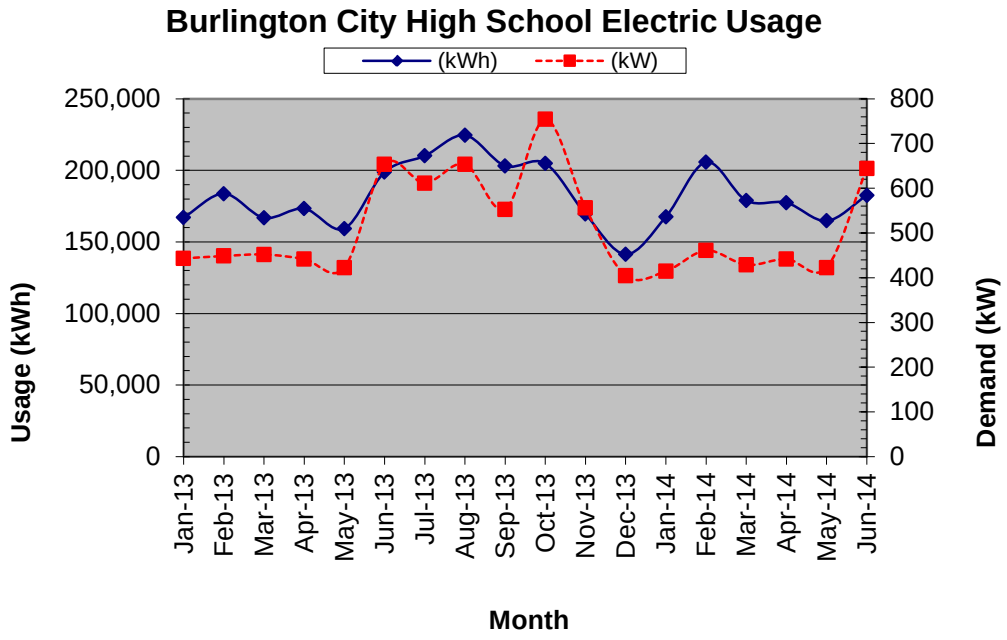
Natural gas and electricity are separately metered into this building. Utilities used by the building are delivered and supplied by the following utility companies:

	Electric	Natural Gas
Deliverer	PSE&G	PSE&G
Supplier	ACES	HESS

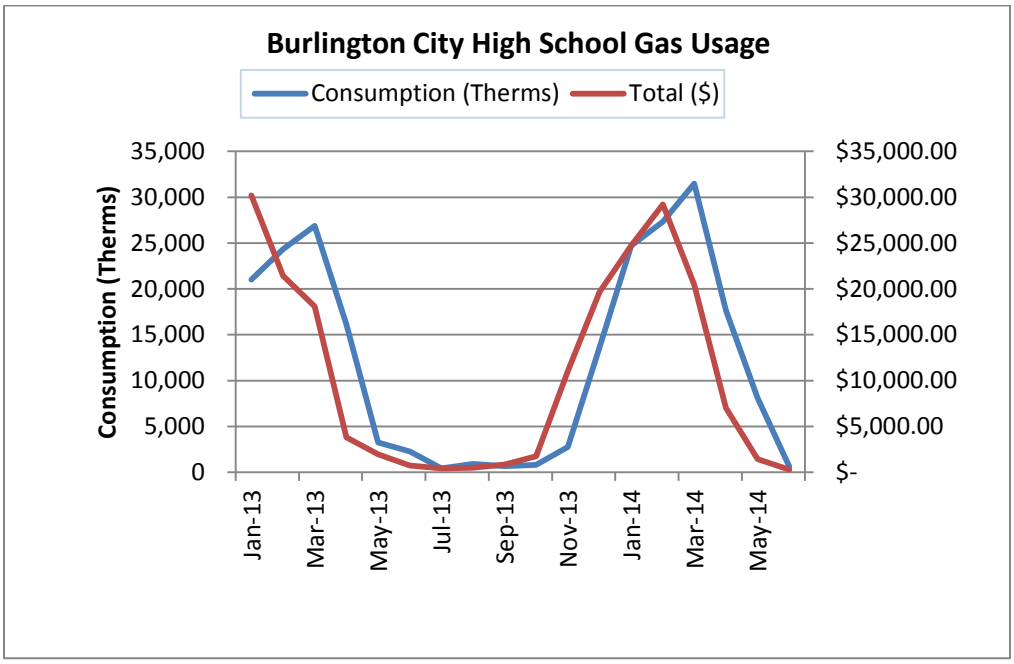
For the 12-month period ending in June 2014, the utilities usages and costs for the building were as follows:

Electric		
Annual Consumption	2,230,474	kWh
Annual Cost	336,537	$
Blended Unit Rate	0.151	$/kWh
Supply Rate	0.141	$/kWh
Demand Rate	3.54	$/kW
Peak Demand	754.4	kW
Natural Gas		
Annual Consumption	129,134	Therms
Annual Cost	117,333	$
Unit Rate	0.909	$/therm

Blended Rate: Average rate charged determined by the annual cost / annual usage
Supply Rate: Actual rate charged for electricity usage in kWh (based on most recent electric bill)
Demand Rate: Rate charged for actual electrical demand in kW (based on most recent electric bill)
*Some months that do not have utility data and the missing demand usage are estimated and highlighted in the utility spreadsheet



The electric usage is pretty consistent throughout the year and varies with the usage of the building. In the summer months, the electric usage is higher than other months because of the cooling usage.



The natural gas usage in this building is for heating and DHW production, and therefore the usage in summer months is relatively small compared with heating months. The gas usage during the heating season is correlated to winter weather conditions.

See Appendix A for utility analysis.

Under New Jersey's energy deregulation law, the supply portion of the electric (or natural gas) bill is separated from the delivery portion. The supply portion is open to competition, and customers can shop around for the best price for their energy suppliers. The electric and natural gas distribution utilities will still deliver the gas/ electric supplies through their wires and pipes – and respond to emergencies, should they arise – regardless of where those supplies are purchased. Purchasing the energy supplies from a company other than your electric or gas utility is purely an economic decision; it has no impact on the reliability or safety of the service.

Comparison of Utility Rates to NJ State Average Rates*				Recommended to Shop for Third Party Supplier?
Utility	Units	School Average Rate	NJ Average Rate	
Electricity	$/kWh	$0.15	$0.13	Y
Natural Gas	$/Therm	$0.91	$0.96	N

* Per U.S. Energy Information Administration (2013 data – Electricity and Natural Gas, 2012 data – Fuel Oil)

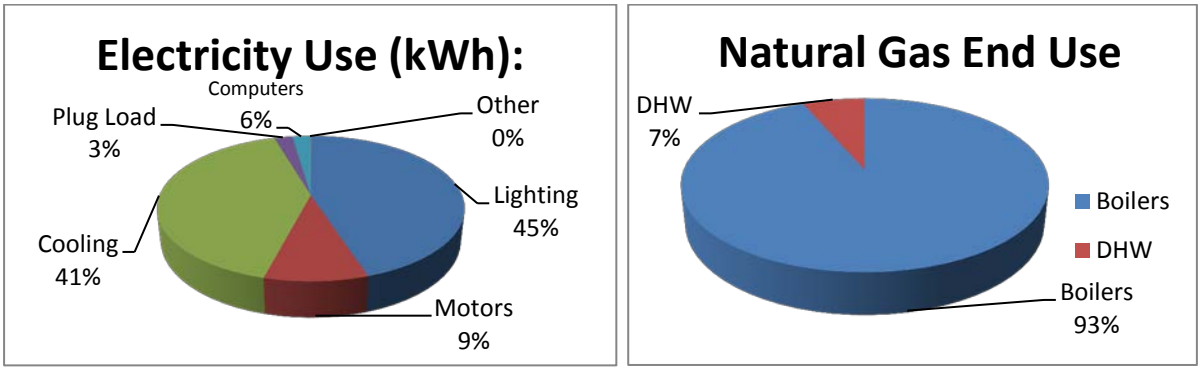
Additional information on selecting a third party energy supplier is available here:

http://www.state.nj.us/bpu/commercial/shopping.html.

See Appendix A for a list of third-party energy suppliers licensed by the Board of Public Utilities to sell within the building's service area.

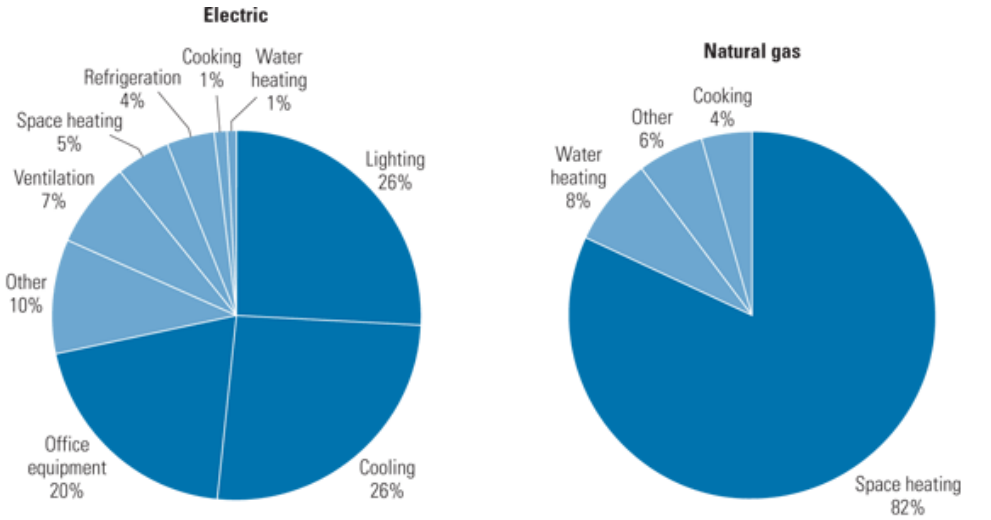
The charts below represent estimated utility end-use utility profiles for the building. The values used within the charts were estimated from a review of the utility analysis and the energy savings calculations.

Site End-Use Utility Profile



Most of the electricity consumed by educational facilities is used to for lighting, cooling, and plug loads such as computers and copiers; most of the natural gas is used for space heating. Each school's energy profile is different, and the following charts represent typical utility profiles for K-12 schools per U.S. Department of Energy.

Typical End-Use Utility Profile for Educational Facilities



Courtesy: E SOURCE; from Commercial Building Energy Consumption Survey, 1999 data

4.0 BENCHMARKING

The EPA Portfolio Manager benchmarking tool provides a site and source Energy Use Intensity (EUI), as well as an Energy Star performance rating for qualifying building types. The EUIs are provided in kBtu/ft2/year, and the performance rating represents how energy efficient a building is on a scale of 1 to 100, with 100 being the most efficient. In order for a building to receive and Energy Star label, the energy benchmark rating must be at least 75. As energy use decreases from implementation of the proposed measures, the Energy Star rating will increase. However, the EPA does not have score for all types of buildings. The buildings that do not have energy rating now are compared with national median EUI.

The site EUI is the amount of heat and electricity consumed by a building as reflected in utility bills. Site energy may be delivered to a facility in the form of primary energy, which is raw fuel burned to create heat or electricity, such as natural gas or oil; or as secondary energy, which is the product created from a raw fuel such as electricity or district steam. To provide an equitable comparison for different buildings with varying proportions of primary and secondary energy consumption, Portfolio Manager uses the convention of source EUIs. The source energy also accounts for losses incurred in production, storage, transmission, and delivery of energy to the site, which provide an equivalent measure for various types of buildings with differing energy sources. The results of the benchmarking are contained in the table below. Copies of the benchmarking report are available in Appendix G.

Site EUI kBtu/ft^2/yr	Source EUI (kBtu/ft^2/yr)	Energy Star Rating (1-100)
98.8	180.3	40

The school has a below average Energy Star Rating Score (50 being the median score), and as such by implementing the measures discussed in this report, it is expected that the EUI can be further reduced and the Energy Star Rating further increased.

5.0 ENERGY CONSERVATION MEASURES

The following types of energy savings opportunities are identified in this section of the report:

- Energy conservation measures (ECMs) are energy savings recommendations that typically require a financial investment. For these areas of opportunity, CHA prepared detailed calculations, as summarized in this section and in Appendix C. In general, additional savings may exist from reductions in maintenance activities associated with new equipment or better controls; however for conservatism, maintenance savings are not accounted for in this report; instead the only savings which are reported are those derived directly from reductions in energy which can be tracked by the utility bills.

- Operational and Maintenance measures (O&M) consist of low- or no-cost operational opportunities, which if implemented would have positive impacts on overall building operation, comfort levels, and/or energy usage. There are no estimated savings, costs or paybacks associated with the O&M measures included as part of this study.

Energy savings were quantified in the form of:

- electrical usage (kWh=Kilowatt-hour),
- electrical demand (kW=kilowatts),
- natural gas (therms=100,000 Btu),
- propane gas (gallons=91,650 Btu),
- fuel oil (gallons =138,700 Btu), and
- water (kgal=1,000 gallons).

These recommendations are influenced by the time period that it takes for a proposed project to "break even" referred to as "Simple Payback". Simple payback is calculated by dividing the estimated cost of implementing the ECM by the energy cost savings (in dollars) of that ECM.

Another financial indicator of the performance of a particular ECM is the Return on Investment or ROI, which represents the benefit (annual savings over the life of a project) of an investment divided by the cost of the investment. The result is expressed as a percentage or ratio.

Two other financial analyses included in this report are Internal Rate of Return (IRR) and Net Present Value (NPV). Internal Rate of Return is the discount rate at which the present value of a project costs equals the present value of the project savings. Net Present Value is the difference between present value of an investment's future net cash flows and the initial investment. If the NPV equals "0", the project would equate to investing the same amount of dollars at the desired rate. NPV is sometimes referred to as Net Present Worth. These values are provided in the Summary Tab in Appendix C.

5.1 ECM-1 Replace Gym AHUs with Heat Recovery AHUs

The gymnasium has two older air handling units which do not have energy recovery capacity. Currently, these two units exhaust about 30% of the return air and have some condensate draining issues. The school is interested to replacing them with AHUs that can recover energy from the exhaust air. The new AHUs are equipped with energy recovery wheels to capture the energy from the exhaust air to pre-condition the fresh air.

The energy savings are calculated based on BIN data and the estimated CFM of exhaust air. Also, the extra electric usage of the recovery wheel fan motors is considered.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-1 Replace Gym AHUs with Heat Recovery AHUs

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
119,086	0	-7,143	8,822	6,941	0.5	1,950	17.2	16.9

* Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended since the overall payback period of the ECMs is favorable and the AHUs are near the end of their useful life span.

5.2 ECM-2 Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs

Existing operation of the AHUs that serve the gymnasium, cafeteria and auditorium utilize a fixed outdoor air damper position, so that the required amount of outdoor air is always introduced into the space to meet ventilation code, whenever the unit is operating. The percentage of outdoor air is generally calculated based on maximum expected occupancy of the space, which results in more outside air being heated than necessary for typical space occupancy. This measure evaluates implementing demand control ventilation (DCV), which consists of installing Carbon Dioxide (CO2) sensors in the return duct. The sensors will monitor CO2 levels to determine the occupancy of the room. When this level is sufficiently low, the damper positions will change based on a preprogrammed algorithm to allow more return air to recirculate through the AHU. This will decrease the amount of heating needed for the outside air, resulting in energy savings.

The saving calculation for this measure quantifies the heating load of each AHU, based on minimum scheduled percent outdoor air along with an estimated averaged temperature differential between indoor air and outdoor air to determine existing energy usage on AHUs.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-2 Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
16,000	0	5,897	669	1,499	0.4	0	10.7	10.7

* Does not qualify for Incentive from the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is recommended.

5.3 ECM-3 Install a Central Web-Based DDC System for all Schools, Integrate the Existing Individual DDC System and Retro-Commissioning

Each school in Burlington City Public Schools has a digital control system except Elias Boudinot School, however, the control systems are old and do not communicate to each other. In discussion with the facility staff, it was noted that some of the sensors may not function properly and the system may lose control on some equipment. The school is interested in integrating all the control systems into one web-based central system. Therefore, converting the existing control system to a Full Direct Digital Control (DDC) building automation system using BACnet protocol and retro-commissioning are recommended. This new system allows for the implementation of energy efficient strategies, such as: time of day (TOD) optimization, set point optimization, staggered start, night setback, temporary daytime setback, economizer (free cooling), demand control ventilation, exhaust fan shut down, and holiday TOD optimization. It also allows for remote access for control and monitoring of the building's systems.

Commissioning is the process of verifying that systems are designed, installed, functionally tested, and capable of being operated and maintained according to the owner's operational needs. Retro-commissioning is the same systematic process applied to existing buildings.

Both controls and components of the heating and cooling systems present saving opportunities during the retro-commissioning process. The DDC system and controls within a building play a crucial role in providing a comfortable building environment. Over time, temperature sensors or thermostats may drift out of synch. Poorly calibrated sensors can increase heating and cooling loads and lead to occupant discomfort. The following procedure is recommended:

- Calibrate the indoor and outdoor building sensors. Calibration of room thermostats, duct thermostats, humidistats, and pressure and temperature sensors should be in accordance with the original design specifications. Calibrating these controls may require specialized skills or equipment and may require outside expertise.
- Inspect damper and valve controls to verify proper functioning. Dampers should also be examined for proper opening and closing. Stiff dampers can cause improper modulation of the amount of outside air being used in the supply

airstream. In some cases, dampers may be wired in a single position or disconnected, violating minimum outside air requirements.

- Review building operating schedules. HVAC controls must be adjusted to heat and cool the building properly during occupied hours. Occupancy schedules can change frequently over the life of a building, and control schedules should be adjusted accordingly. When the building is unoccupied, the temperature should be set back to save heating or cooling energy; however, minimal heating and cooling may be required when the building is unoccupied. In cold climates, for example, heating may be needed to keep water pipes from freezing.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-3 Install a Central Web-Based DDC System for all Schools, Integrate the Existing Individual DDC System and Retro-Commissioning

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
157,638	0	23,876	1,353	4,835	(0.5)	3,500	32.6	31.9

* Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended since the overall payback period of the ECMs is favorable.

5.4 ECM-4 Replace Domestic Hot Water Heaters with Condensing DHW Heater

This building has a Raypak gas fired DHW heater located in the mechanical room. The heater has a rated 399 MBH heating capacity. This heater provides domestic hot water for kitchen and the whole building. The school is interested in installing condensing DHW heaters and therefore it is suggested that a high efficiency condensing DHW heater be installed to replace the existing one.

The gas fired heater has efficiency in the range of 80%. It is suggested to replace this heater with a gas fired condensing heater. Energy savings could be realized by replacing the heater with one high efficiency condensing gas fired heater, which can operate at efficiencies up to 96% and have less standby energy loss from the storage tank.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-4 Replace Domestic Hot Water Heaters with Condensing DHW Heater

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
24,698	0	0	1,325	1,204	(0.3)	2,000	20.5	18.8

* Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended since the overall payback period of the ECMs is favorable and the equipment is near the end of their useful life span.

5.5 ECM-5 Install Variable Speed Kitchen Hood Exhaust System

The kitchen contains a kitchen hood with one exhaust fan and one make up air unit that run continuously when the kitchen is operational. Installing a control system was evaluated. Upon activation, the hood lights turn on and the fans reach a preset minimum speed of between 10 and 50 percent. The exhaust fan speed increases based on exhaust air temperature when the cooking applications are on. During actual cooking, the speed increases to 100 percent until smoke and heat are removed. The control will also send a signal to the kitchen hood make-up air fan to modulate the speed on the make-up air fan drive based on exhaust air quantity.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-5 Install VFDs on the Auditorium Air Handling Unit

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
42,073	0	8,937	2,191	3,342	0.2	0	12.6	12.6

* Does not qualify for Incentive from the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is recommended.

5.6 ECM-6 Install Control on the Walk-in Fridges and Freezers

The cafeteria kitchen contains (1) walk-in cooler and (1) walk-in freezer. These units do not have controls and run continuously throughout the day. Installing a CoolTrol® Cooler Control System was assessed. The system will monitor both dry and wetbulb temperature within the walkin and allow evaporators and compressors to modulate up and down based on enthalpy setpoints rather than by dry bulb temperature alone. Savings is a result of reduced run time of evaporator fans, compressors and door heaters.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-6 Install Control on the Walk-in Fridges and Freezers

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
20,625	0	6,225	0	940	(0.3)	0	21.9	21.9

* Does not qualify for Incentive from the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is recommended since the overall payback period of the ECMs is favorable.

5.7 ECM-7 Replace Dishwasher Electric Booster Heater with Gas Booster Heater

The dishwasher has a 6kW electric booster heater for the disinfection purposes. The facility uses this dishwasher almost every school day according to kitchen staff. Utilizing natural gas for the heater is assessed.

The calculation uses electrical consumption and annual electrical cost as the baseline, which was converted to natural gas for the proposed case. The difference between the two values is the energy savings.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-7 Replace Dishwasher Electric Booster Heater with Gas Booster Heater

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
19,000	6	2,110	-90	485	(0.6)	4,200	39.2	30.5

* Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended since the overall payback period of the ECMs is favorable.

5.8.1 ECM-L1 Lighting Replacement / Upgrades

The existing lighting system consists of mostly 32 watt T8 linear fluorescent fixtures which until recently represented the most efficient lighting technology available. Recent technological improvements in light emitting diode (LED) technologies have driven down the initial costs making it a viable option for installation.

Overall energy consumption can be reduced by replacing inefficient bulbs and linear fluorescent bulbs with more efficient LED technology. To compute the annual savings for this ECM, the energy consumption of the current lighting fixtures was established and compared to the proposed fixture power requirement with the same annual hours of operation. The difference between the existing and proposed annual energy consumption was the energy savings. These calculations are based on 1 to 1 replacements of the fixtures, and do not take into account lumen output requirements for a given space. A more comprehensive engineering study should be performed to determine correct lighting levels.

Supporting calculations, including assumptions for lighting hours and annual energy usage for each fixture, are provided in Appendix C and summarized below:

ECM-L1 Lighting Replacement / Upgrades

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
608,259	123	459,555	0	70,003	0.8	0	8.7	8.7

* LED new fixtures are still qualified for prescribed incentives, however, LED retrofits must go through the custom incentive which is not calculated in LGEA study therefore, the potential incentive shown in the table is the possible prescribed incentive.

This measure is not recommended in lieu of ECM L3.

5.8.2 ECM-L2 Install Lighting Controls (Occupancy Sensors)

Presently, this building has a central lighting control system which turns off all the lights except safety lights at midnight and turn on the lights at 7:00AM. The timer system overrides the switches. Review of the comprehensive lighting survey determined that lighting in some areas could benefit from installation of occupancy sensors to turn off lights when they are unoccupied.

This measure recommends installing occupancy sensors for the current lighting system. Using a process similar to that utilized in Section ECM-L1, the energy savings for this measure was calculated by applying the known fixture wattages in the space to the estimated existing and proposed times of operation for each fixture.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-L2 Install Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
9,950	0	27,719	0	3,908	5.3	1,310	2.5	2.5

* Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is not recommended in lieu of ECM L3.

5.8.3 ECM-L3 Lighting Replacements with Controls (Occupancy Sensors)

This measure is a combination of ECM-L1 and ECM-L2; recommending replace/upgrade the current lighting fixtures to more efficient ones and installing occupancy sensors on the new lights. Interactive effects of the higher efficiency lights and occupancy sensors lead the energy and cost savings for this measure to not be cumulative or equivalent to the sum of replacing the lighting fixtures alone and installing occupancy sensors without the lighting upgrade. The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-L3 Lighting Replacements with Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
618,208	123	467,990	0	71,192	0.8	1,310	8.7	8.7

* LED new fixtures are still qualified for prescribed incentives, however, LED retrofits must go through the custom incentive which is not calculated in LGEA study therefore, the potential incentive shown in the table is the possible prescribed incentive.

This measure is recommended.

5.9 Additional O&M Opportunities

This list of operations and maintenance (O&M) - type measures represent low-cost or no-cost opportunities, which if implemented will have a positive impact on the overall building operations, comfort and/or energy consumption. The recommended O&M measures for this building are as follows:

- O&M-1 Turn off HHW Pump Motors in Cooling Season
- O&M-2 Insulate AHU Supply Air Duct on the Roof
- O&M-3 Look for the ENERGY STAR® label when purchasing Kitchen Appliances
- O&M-4 Train custodians to turn off lights and electric appliances when not used

6.0 PROJECT INCENTIVES

6.1 Incentives Overview

The following sections give detailed information on available incentive programs including New Jersey Smart Start, Direct Install, New Jersey Pay for Performance (P4P) and Energy Savings Improvement Plan (ESIP). If the School District wishes to and is eligible to participate in the Energy Savings Improvement Plan (ESIP) program and/or the Pay for Performance Incentive Program (P4P), it cannot participate in either the Smart Start or Direct Install Programs. Refer to Appendix D for more information on the Smart Start program.

6.1.1 New Jersey Smart Start Program

For this energy audit, The New Jersey Smart Start Incentives are used in the energy savings calculations, where applicable. This program is intended for medium and large energy users and provides incentives for:

- Electric Chillers
- Gas Chillers
- Gas Heating
- Unitary HVAC
- Ground Source Heat Pumps
- Variable frequency Drives/ motors
- Refrigeration
- Prescriptive and performance lighting and lighting controls

The equipment is procured using a typical bid- build method, installed and paid for and then the incentives are reimbursed to the owner.

Refer to Appendix D for more information on the Smart Start program.

6.1.2 Direct Install Program

The Direct Install Program applies to smaller facilities that have a peak electrical demand of 200 kW or less in any of the previous 12 months. Buildings must be located in New Jersey and served by one of the state's public, regulated electric utility companies.

Direct Install is funded through New Jersey's Clean Energy Program and is designed to provide capital for building energy upgrade projects to fast track implementation. The program will pay up to 70% of the costs for lighting, HVAC, motors, refrigeration, and other equipment upgrades with higher efficiency alternatives. If a building is eligible for this funding, the Direct Install Program can reduce the implementation cost of energy conservation projects.

The Direct Install program has specific HVAC equipment and lighting requirements and is generally applicable only to smaller package HVAC units, small boilers and lighting retrofits.

The program pays a maximum amount of $75,000 per building, and up to $250,000 per customer per year. Installations must be completed by an approved Direct Install participating contractor, a list of which can be found on the New Jersey Clean Energy Website. Contractors will coordinate with the applicant to arrange installation of recommended measures identified in a previous energy assessment, such as this energy audit. The incentive is reimbursed to the Owner upon successful replacement and payment of the equipment.

The building does not qualify for this program because its electrical demand is more than the maximum peak electrical demand of 200 kW for the last 12 month period.

Refer to Appendix D for more information on this program.

6.1.3 New Jersey Pay For Performance Program (P4P)

This building may be eligible for incentives from the New Jersey Office of Clean Energy. The most significant incentives are available from the New Jersey Pay for Performance (P4P) Program. The P4P program is designed to offset the cost of energy conservation projects for facilities that pay the Societal Benefits Charge (SBC) and whose demand (kW) in any of the preceding 12 months exceeds 100 kW. This demand minimum has been waived for buildings owned by local governments or municipalities and non-profit organizations and *is not applicable to public schools*. Facilities that meet this criterion must also achieve a minimum performance target of 15% energy reduction by using the EPA Portfolio Manager benchmarking tool before and after implementation of the measure(s). Additionally, the overall return on investment (ROI) must exceed 10%. If the participant is a municipal electric company customer, and a customer of a regulated gas New Jersey Utility, only gas measures will be eligible under the Program. Available incentives are as follows:

Incentive #1: Energy Reduction Plan – This incentive is designed to offset the cost of services associated with the development of the Energy Reduction Plan (ERP). The ERP must include a detailed energy audit of the desired ECMs, energy savings calculations (using building modeling software) and inputting of all utility bills into the EPA Portfolio Manager website.

- Incentive Amount: $0.10/SF
- Minimum incentive: $5,000
- Maximum Incentive: $50,000 or 50% of Facility annual energy cost

The standard incentive pays $0.10 per square foot, up to a maximum of $50,000, not to exceed 50% of facility annual energy cost, paid after approval of application. For building audits funded by the New Jersey Board of Public Utilities, which receive an initial 75% incentive toward performance of the energy audit, facilities are only eligible for an additional $0.05 per square foot, up to a maximum of $25,000, rather than the standard incentive noted above. The ERP must be completed by a Certified Energy Manager (CEM) and submitted along with the project application.

Incentive #2: Installation of Recommended Measures – This incentive is based on projected energy savings as determined in Incentive #1 (Minimum 15% savings must be achieved), and is paid upon successful installation of recommended measures.

Electric

- Base incentive based on 15% savings: $0.09/ per projected kWh saved.
- For each % over 15% add: $0.005 per projected kWh saved.
- Maximum incentive: $0.11/ kWh per projected kWh saved.

Gas

- Base incentive based on 15% savings: $0.90/ per projected Therm saved.
- For each % over 15% add: $0.05 per projected Therm saved.
- Maximum incentive: $1.25 per projected Therm saved.

Incentive cap: 25% of total project cost

Incentive #3: Post-Construction Benchmarking Report – This incentive is paid after acceptance of a report proving energy savings over one year utilizing the Environmental Protection Agency (EPA) Portfolio Manager benchmarking tool.

Electric

- Base incentive based on 15% savings: $0.09/ per projected kWh saved.
- For each % over 15% add: $0.005 per projected kWh saved.
- Maximum incentive: $0.11/ kWh per projected kWh saved.

Gas

- Base incentive based on 15% savings: $0.90/ per projected Therm saved.
- For each % over 15% add: $0.05 per projected Therm saved.
- Maximum incentive: $1.25 per projected Therm saved.

Combining Incentives #2 and #3 will provide a total of $0.18/ kWh and $1.8/therm not to exceed 50% of total project cost. Additional Incentives for #2 and #3 are increased by $0.005/kWh and $0.05/therm for each percentage increase above the 15% minimum target to 20%, calculated with the EPA Portfolio Manager benchmarking tool, not to exceed 50% of total project cost.

For the purpose of demonstrating the eligibility of the ECM's to meet the minimum savings requirement of 15% annual savings and 10% ROI for the Pay for Performance Program, all ECM's identified in this report have been included in the incentive calculations. The results for the building are shown in Appendix C, with more detailed program information in Appendix D.

6.1.4 Energy Savings Improvement Plan

The Energy Savings Improvement Program (ESIP) allows government agencies to make energy related improvements to their facilities and pay for the costs using the value of energy savings that result from the improvements. Under the recently enacted Chapter 4 of the Laws of 2009 (the law), the ESIP provides all government agencies in New Jersey with a flexible tool to improve and reduce energy usage with minimal expenditure of new financial resources.

ESIP allows local units to use “energy savings obligations” (ESO) to pay for the capital costs of energy improvements to their facilities. ESIP loans have a maximum loan term of 15 year. ESOs are not considered “new general obligation debt” of a local unit and do not count against debt limits or require voter approval. They may be issued as refunding bonds or leases. Savings generated from the installation of energy conservation measures pay the principal of and interest on the bonds; for that reason, the debt service created by the ESOs is not paid from the debt service fund, but is paid from the general fund.

For local governments interested in pursuing an ESIP, the first step is to perform an energy audit. Pursuing a Local Government Energy Audit through New Jersey's Clean Energy Program is a valuable first step to the ESIP approach. The “Local Finance Notice” outlines how local governments can develop and implement an ESIP for their facilities. The ESIP can be prepared internally if the entity has qualified staff. If not, the ESIP must be implemented by an independent contractor and not by the energy savings company producing the Energy Reduction Plan.

The ESIP approach may not be appropriate for all energy conservation and energy efficiency improvements. Local units should carefully consider all alternatives to develop an approach that best meets their needs. Refer to Appendix D for more information on this program.

6.1.5 Renewable Energy Incentive Program

The Renewable Energy Incentive Program (REIP) is part of New Jersey's efforts to reach its Energy Master Plan goals of striving to use 30 percent of electricity from renewable sources by 2020.

Incentives for sustainable bio-power projects and for energy storage projects are currently under development, with competitive solicitations for each of those technologies expected to begin in the first quarter of 2014. The wind program is currently on hold.

New solar projects are no longer eligible for REIP incentives, but can register for Solar Renewable Energy Certificates (SRECs) through the SREC Registration Program (SRP).

7.0 ALTERNATIVE ENERGY SCREENING EVALUATION

7.1 Solar

7.1.1 Photovoltaic Rooftop Solar Power Generation

The building was evaluated for the potential to install rooftop photovoltaic (PV) solar panels for power generation. Present technology incorporates the use of solar cell arrays that produce direct current (DC) electricity. This DC current is converted to alternating current (AC) with the use of an electrical device known as an inverter. The amount of available roof area determines how large of a solar array can be installed on any given roof. The table below summarizes the approximate roof area available on the building and the associated solar array size that can be installed.

Available Roof Area (Ft^2)	Potential PV Array Size (kW)
58,889	360

The PVWATTS solar power generation model was utilized to calculate PV power generation; this model is provided in Appendix E.

Installation of (PV) arrays in the state New Jersey will allow the owner to participate in the New Jersey Solar Renewable Energy Certificates Program (SREC). This is a program that has been set up to allow entities with large amounts of environmentally unfriendly emissions to purchase credits from zero emission (PV) solar-producers. An alternative compliance penalty (ACP) is paid for by the high emission producers and is set each year on a declining scale of 3% per year. One SREC credit is equivalent to 1000 kilowatt hours of PV electrical production; these credits can be traded for period of 15 years from the date of installation. Payments that will be received by the PV producer (school) will change from year to year dependent upon supply and demand. There is no definitive way to calculate an exact price that will be received by the PV producer for SREC credits over the next 15 years. Renewable Energy Consultants estimates an average of $160/SREC for August 2014 and this number was utilized in the cash flow for this report.

The system costs for PV installations were derived from recent solar contractor budgetary pricing in the state of New Jersey and include the total cost of the system installation (PV panels, inverters, wiring, ballast, controls). The cost of installation is currently about $4.00 per watt or $4,000 per kW of installed system, for a typical system. There are other considerations that have not been included in this pricing, such as the condition of the roof and need for structural reinforcement. Photovoltaic systems can be ground mounted if the roof is not suitable, however, this installation requires a substantial amount of open property (not wooded) and underground wiring, which adds more cost. PV panels have an approximate 20 year life span; however, the inverter device that converts DC electricity to AC has a life span of 10 to 12 years and will most likely need to be replaced during the useful life of the PV system.

The implementation cost and savings related to this ECM are presented in Appendix E and summarized as follows:

Photovoltaic (PV) Rooftop Solar Power Generation – 360 kW System

Budgetary Cost	Annual Utility Savings			Total Savings	New Jersey Renewable SREC	Payback (without SREC)	Payback (with SREC)	Recommended
	Electricity		Natural Gas					
$	kW	kWh	Therms	$	$	Years	Years	Y/N
$1,440,000	360.0	436,799	0	$65,957	$69,888	21.8	10.6	FS

Note: CHA typically recommends a more detailed evaluation be conducted for the installation of PV Solar arrays when the screening evaluation shows a payback of less than 20 years. Therefore, this ECM is recommended for further study. Before implementation is pursued, the school district should consult with a certified solar PV contractor.

7.1.2 Solar Thermal Hot Water Generation

Active solar thermal systems use solar collectors to gather the sun's energy to heat a fluid. An absorber in the collector (usually black colored piping) converts the sun's energy into heat. The heat is transferred to circulating water, antifreeze, or air for immediate use or is storage for later utilization. Applications for active solar thermal energy include supplementing domestic hot water, heating swimming pools, space heating or preheating air in residential and commercial buildings.

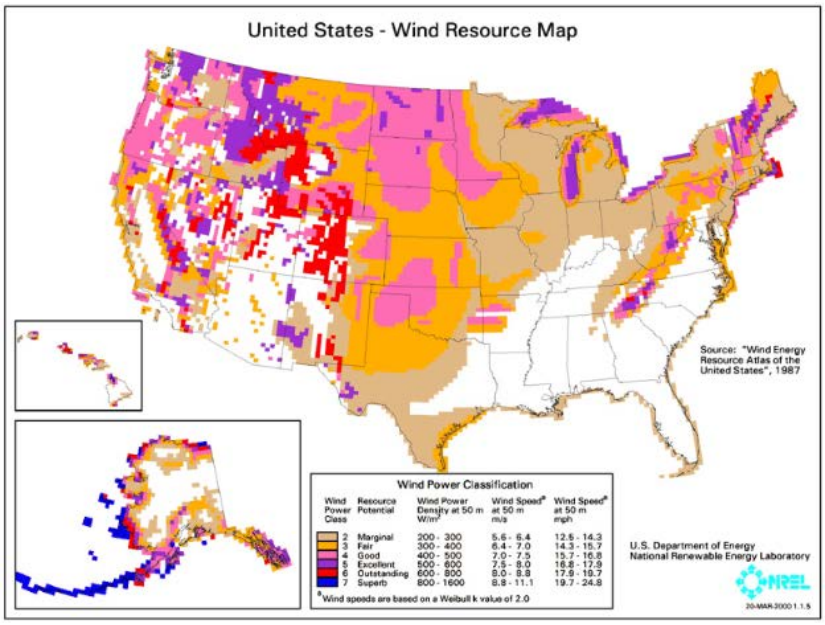
A standard solar hot water system is typically composed of solar collectors, heat storage vessel, piping, circulators, and controls. Systems are typically integrated to work alongside a conventional heating system that provides heat when solar resources are not sufficient. The solar collectors are usually placed on the roof of the building, oriented south, and tilted at the same angle as the site's latitude, to maximize the amount of solar radiation collected on a yearly basis.

Several options exist for using active solar thermal systems for space heating. The most common method is called a passive solar hot water system involves using glazed collectors to heat a liquid held in a storage tank (similar to an active solar hot water system described above which requires pumping). The most practical system would transfer the heat from the panels to thermal storage tanks and then use the pre-heated water for domestic hot water production. DHW is presently produced by natural gas fired water heaters and, therefore, this measure would offer natural gas utility savings. Unfortunately, the amount of domestic hot water that is currently used by this school is very small. Installing a solar domestic hot water system is not recommended due to the limited amount of domestic hot water presently consumed by the school.

This measure is not recommended due to the relatively low domestic hot water usage.

7.2 Wind Powered Turbines

Wind power is the conversion of kinetic energy from wind into mechanical power that is used to drive a generator which creates electricity by means of a wind turbine. A wind turbine consists of rotor and blades connected to a gearbox and generator that are mounted onto a tower. Newer wind turbines also use advanced technology to generate electricity at a variety of frequencies depending on the wind speed, convert it to DC and then back to AC before sending it to the grid. Wind turbines range from 50 – 750 kW for utility scale turbines down to below 50 kW for residential use. On a scale of 1 (the lowest) to 7 (the highest), Class 3 and above (wind speeds of 13 mph or greater) are generally considered "good wind resource" according to the Wind Energy Development Programmatic EIS Information Center hosted by the Bureau of Land Management. According to the map below, published by NREL, Newark, NJ is classified as Class 1 at 50m, meaning the city would not be a good candidate for wind power.



This measure is not recommended due to the location of the school.

7.3 Combined Heat and Power Plant

Combined heat and power (CHP), cogeneration, is self-production of electricity on-site with beneficial recovery of the heat byproduct from the electrical generator. Common CHP equipment includes reciprocating engine-driven, micro turbines, steam turbines, and fuel cells. Typical CHP customers include industrial, commercial, institutional, educational institutions, and multifamily residential facilities. CHP systems that are commercially viable at the present time are sized approximately 50 kW and above, with numerous options in blocks grouped around 300 kW, 800 kW, 1,200 kW and larger. Typically, CHP systems are used to produce a portion of the electricity needed by a facility some or all of the time, with the balance of electric needs satisfied by purchase from the grid.

Any proposed CHP project will need to consider many factors, such as existing system load, use of thermal energy produced, system size, natural gas fuel availability, and proposed plant location. The building has sufficient need for electrical generation and the ability to use most of the thermal byproduct during the winter; however thermal usage during the summer months does not exist. Thermal energy produced by the CHP plant in the warmer months will be wasted. An absorption chiller could be installed to utilize the heat to produce chilled water; however, there is no chilled water distribution system in the building. CHP is not recommended due to the building's limited summer thermal demand.

This measure is not recommended due to the absence of year-round thermal loads which are needed for efficiency CHP operation. However, a mini-size CHP could be an option for the school to consider. The sizing and energy savings of the mini-size CHP require further study.

7.4 Demand Response Curtailment

Presently, electricity is delivered by PSE&G, which receives the electricity from regional power grid RFC. PSE&G is the regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia including the State of New Jersey.

Utility Curtailment is an agreement with the utility provider's regional transmission organization and an approved Curtailment Service Provider (CSP) to shed electrical load by either turning major equipment off or energizing all or part of a facility utilizing an emergency generator; therefore, reducing the electrical demand on the utility grid. This program is to benefit the utility company during high demand periods and utility provider offers incentives to the CSP to participate in this program. Enrolling in the program will require program participants to drop electrical load or turn on emergency generators during high electrical demand conditions or during emergencies. Part of the program also will require that program participants reduce their required load or run emergency generators with notice to test the system.

A pre-approved CSP will require a minimum of 100 kW of load reduction to participate in any curtailment program. From January 2013 through June 2014 the following table summarizes the electricity load profile for the building.

Building Electric Load Profile

Peak Demand kW	Min Demand kW	Avg Demand kW	Onsite Generation Y/N	Eligible? Y/N
754.4	404.6	576.1	N	Y

*the demand is estimated from one month bill

This measure is not recommended due to the lack of enough onsite generation.

8.0 CONCLUSIONS & RECOMMENDATIONS

The following section summarizes the LGEA energy audit conducted by CHA for the Burlington City High School.

The following projects should be considered for implementation:

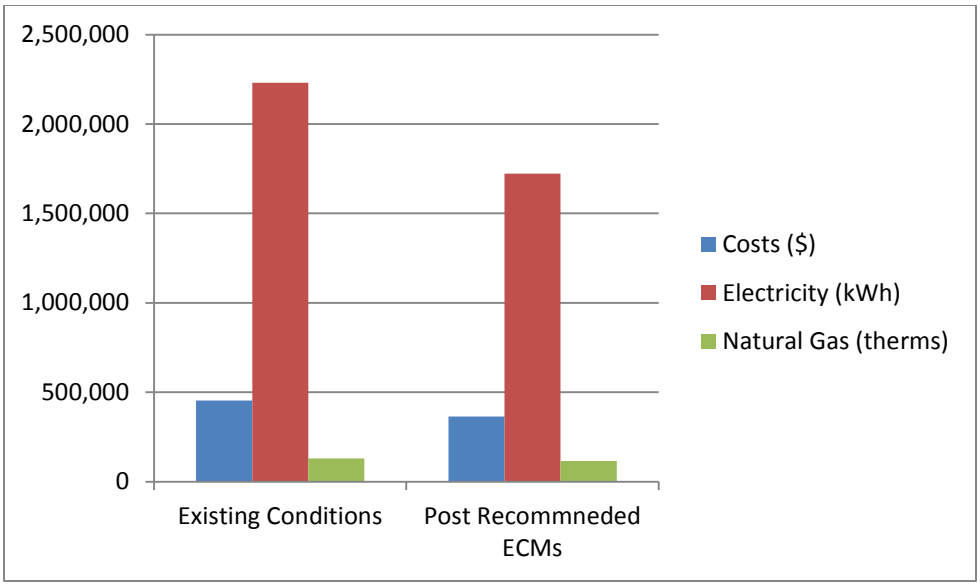
- Replace Gym AHUs with Heat Recovery AHUs
- Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs
- Install a Central Web-Based DDC System for all Schools and Integrate the Existing Individual DDC System
- Replace Domestic Hot Water Heaters with Condensing DHW Heater
- Install Variable Speed Kitchen Hood Exhaust System
- Install Control on the Walk-in Fridges and Freezers
- Replace Dishwasher Electric Booster Heater With Gas Booster Heater
- Lighting Replacements / Upgrades

The potential annual energy and cost savings for the recommended ECMs are shown in the following table.

Electric Savings (kWh)	Natural Gas Savings (therms)	Total Savings ($)	Payback (years)
507,892	14,270	$ 90,437	11.2

If the school implements the recommended ECMs, energy savings would be as follows:

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs ($)	453,870	363,433	20%
Electricity (kWh)	2,230,474	1,722,582	23%
Natural Gas (therms)	129,134	114,864	11%
Site EUI (kbtu/SF/Yr)	98.8	83.6	



Next Steps: This energy audit has identified several areas of potential energy savings. Burlington City Public Schools can use this information to pursue incentives offered by the NJBPU's NJ Clean Energy Program. Additional meetings will be scheduled with school staff members to review possible options.

APPENDIX A

Utility Usage Analysis and Alternate Utility Suppliers

Burlington City Public Schools LGEA
Burlington City High School Electric Usage

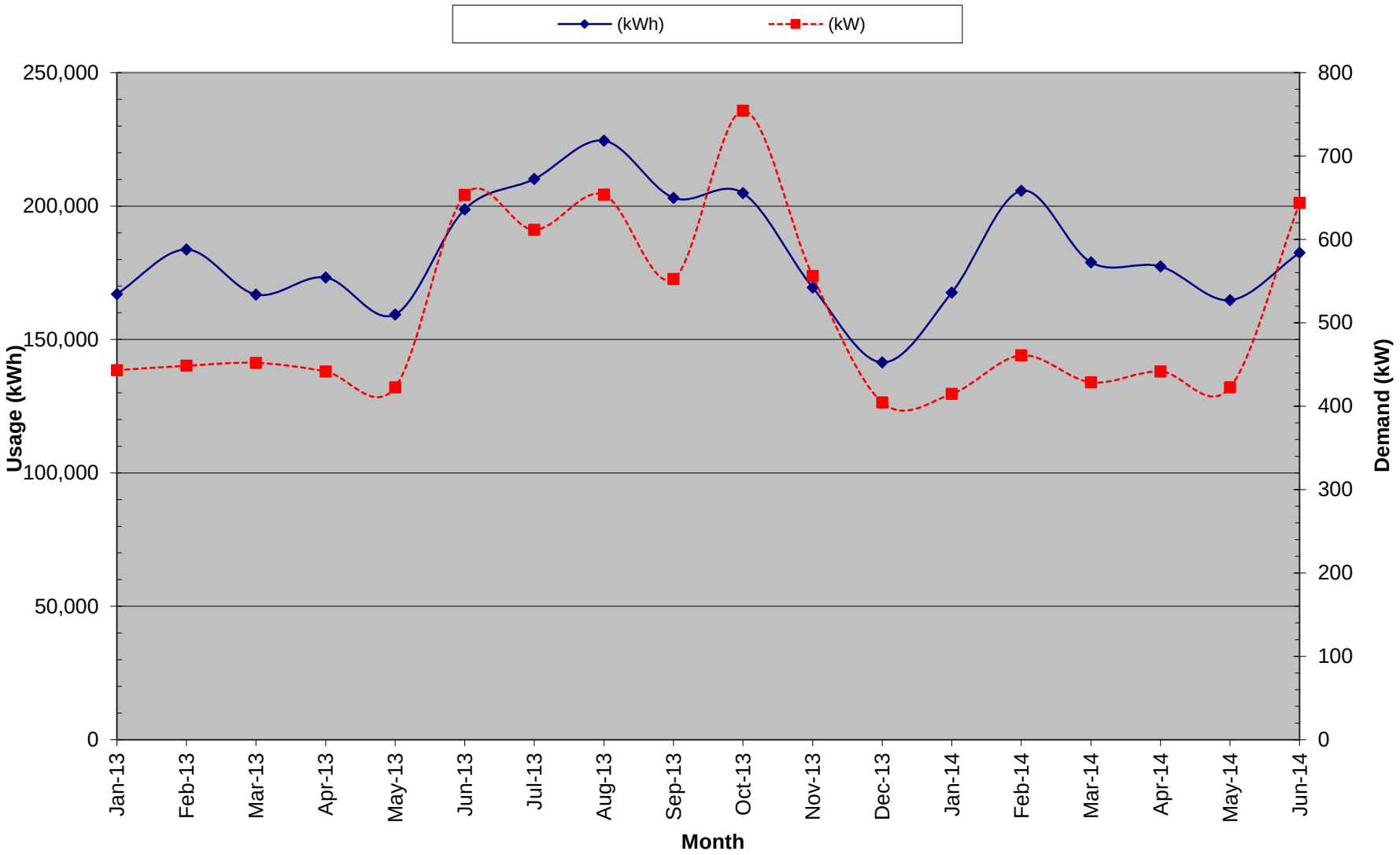
For Service at:
Account No.: **42-006-744-08** **Delivery -** PSE&G
Meter No.: **778013278** **Supplier -** ACES
Electric Service

			Provider Charges			Usage (kWh) vs. Demand (kW) Charges		Unit Costs		
Month	**Consumption (kWh)**	**Demand (kW)**	**Delivery ($)**	**Supplier ($)**	**Total ($)**	**Consumption ($)**	**Demand ($)**	**Blended Rate ($/kWh)**	**Consumption ($/kWh)**	**Demand ($/kW)**
January-13	167,047	443.20	7,246.27	11,743.28	18,989.55	17,418.67	1,570.88	0.11	0.10	3.54
February-13	183,722	448.50	7,969.60	13,623.06	21,592.66	20,003.00	1,589.66	0.12	0.11	3.54
March-13	166,846	452.00	7,237.55	12,112.85	19,350.40	17,748.33	1,602.07	0.12	0.11	3.54
April-13	173,258	441.80	7,515.69	12,466.25	19,981.94	18,416.02	1,565.92	0.12	0.11	3.54
May-13	159,375	422.60	6,913.47	11,671.22	18,584.69	17,086.83	1,497.86	0.12	0.11	3.54
June-13	198,760	653.40	8,621.93	19,259.46	27,881.39	25,565.48	2,315.91	0.14	0.13	3.54
July-13	210,147	611.60	9,115.88	25,640.45	34,756.33	32,588.57	2,167.76	0.17	0.16	3.54
August-13	224,521	653.70	9,739.41	5,238.59	14,978.00	12,661.02	2,316.98	0.07	0.06	3.54
September-13	203,114	552.60	8,810.80	24,333.53	33,144.33	31,185.69	1,958.64	0.16	0.15	3.54
October-13	204,844	754.40	8,885.85	26,897.97	35,783.82	33,109.92	2,673.90	0.17	0.16	3.54
November-13	169,513	556.20	7,353.24	16,835.34	24,188.58	22,217.18	1,971.40	0.14	0.13	3.54
December-13	141,397	404.60	6,133.60	13,894.89	20,028.49	18,594.43	1,434.06	0.14	0.13	3.54
January-14	167,587	414.70	7,269.69	16,169.31	23,439.00	21,969.14	1,469.86	0.14	0.13	3.54
February-14	205,757	461.00	8,925.45	41,852.03	50,777.48	49,143.51	1,633.97	0.25	0.24	3.54
March-14	178,929	428.70	7,761.69	17,294.99	25,056.68	23,537.20	1,519.48	0.14	0.13	3.54
April-14	177,393	441.80	7,695.06	17,141.99	24,837.05	23,271.13	1,565.92	0.14	0.13	3.54
May-14	164,750	422.60	7,146.63	16,033.06	23,179.69	21,681.83	1,497.86	0.14	0.13	3.54
June-14	182,522	643.90	7,917.55	18,450.30	26,367.85	24,085.61	2,282.24	0.14	0.13	3.54
Total (All)	**3,279,482**	**754.40**	**$142,259.36**	**$320,658.57**	**$462,917.93**	**$430,283.56**	**$32,634.37**	**$0.14**	**$0.13**	**$3.54**
Total (12 Months)	**2,230,474**	**754.40**	**$96,754.85**	**$239,782.45**	**$336,537.30**	**$314,045.24**	**$22,492.06**	**$0.15**	**$0.14**	**$3.54**
Notes	1	2	3	4	5	6	7	8	9	10

1.) Number of kWh of electric energy used per month
2.) Number of kW of power measured
3.) Electric charges from Delivery provider
4.) Electric charges from Supply provider
5.) Total charges (Delivery + Supplier)
6.) Charges based on the number of kWh of electric energy used
7.) Charges based on the number of kW of power measured
8.) Total Charges ($) / Consumption (kWh)
9.) Consumption Charges ($) / Consumption (kWh)
10.) Demand Charges ($) / Demand (kW)

Estimated due to missing data

Burlington City High School Electric Usage



Burlington City High School Utility Data
Electric Graph

Burlington City Public Schools LGEA
Burlington City High School Gas Usage

For Service at:
Account No.: **67-221-803-01** **67-443-016-08**
Meter No: **2209373**
Natural Gas Service **Delivery -** **PSE&G**
Supplier - **HESS**

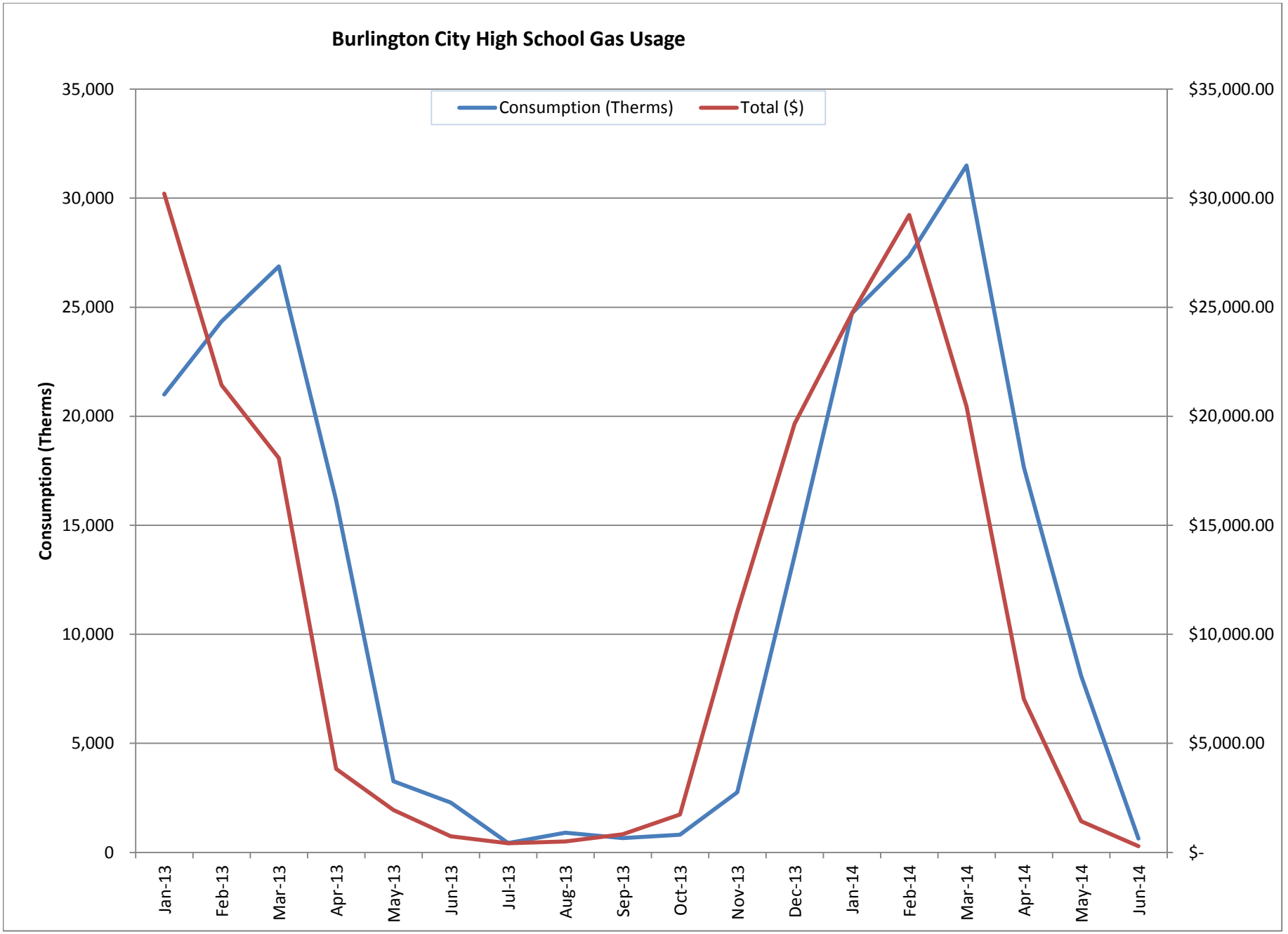
		Charges			Unit Costs		
Month	**Consumption (Therms)**	**Delivery ($)**	**Supply ($)**	**Total ($)**	**Delivery ($/Therm)**	**Supply ($/Therm)**	**Total ($/Therm)**
January-13	21,003	$7,014.41	$23,191.55	$ 30,205.96	$ 0.334	$ 1.104	$ 1.438
February-13	24,346	$7,873.63	$13,556.95	$ 21,430.58	$ 0.323	$ 0.557	$ 0.880
March-13	26,877	$9,650.57	$8,428.68	$ 18,079.25	$ 0.359	$ 0.314	$ 0.673
April-13	16,142	$1,995.00	$1,832.29	$ 3,827.29	$ 0.124	$ 0.114	$ 0.237
May-13	3,263	$616.01	$1,331.97	$ 1,947.98	$ 0.189	$ 0.408	$ 0.597
June-13	2,281	$492.52	$246.66	$ 739.18	$ 0.216	$ 0.108	$ 0.324
July-13	428	$269.94	$153.50	$ 423.44	$ 0.631	$ 0.359	$ 0.989
August-13	906	$338.60	$161.14	$ 499.74	$ 0.374	$ 0.178	$ 0.551
September-13	661	$407.56	$421.72	$ 829.28	$ 0.617	$ 0.638	$ 1.255
October-13	810	$324.23	$1,417.29	$ 1,741.52	$ 0.400	$ 1.751	$ 2.151
November-13	2,756	$3,998.58	$7,029.57	$ 11,028.15	$ 1.451	$ 2.551	$ 4.002
December-13	13,611	$6,310.85	$13,348.58	$ 19,659.43	$ 0.464	$ 0.981	$ 1.444
January-14	24,721	$8,676.30	$16,036.36	$ 24,712.66	$ 0.351	$ 0.649	$ 1.000
February-14	27,342	$9,095.99	$20,135.96	$ 29,231.95	$ 0.333	$ 0.736	$ 1.069
March-14	31,500	$9,714.41	$10,738.25	$ 20,452.66	$ 0.308	$ 0.341	$ 0.649
April-14	17,668	$1,900.73	$5,137.11	$ 7,037.84	$ 0.108	$ 0.291	$ 0.398
May-14	8,093	$1,016.32	$417.09	$ 1,433.41	$ 0.126	$ 0.052	$ 0.177
June-14	639	$282.59	$0.00	$ 282.59	$ 0.442	$ -	$ 0.442
Total (All)	**223,045.46**			**193,562.91**			**$ 0.868**
Total (12 Months)	**129,133.58**			**117,332.67**			**$ 0.909**

67-221-803-01

Month	Consumption (Therms)	Charges			Unit Costs		
		Delivery ($)	Supply ($)	Total ($)	Delivery ($/Therm)	Supply ($/Therm)	Total ($/Therm)
January-13	16,050	$5,116.50	$17,343.94	$ 22,460.44	$ 0.319	$ 1.081	$ 1.399
February-13	17,880	$5,612.85	$9,986.10	$ 15,598.95	$ 0.314	$ 0.559	$ 0.872
March-13	19,783	$6,953.33	$5,548.45	$ 12,501.78	$ 0.351	$ 0.280	$ 0.632
April-13	10,578	$1,264.43	$438.77	$ 1,703.20	$ 0.120	$ 0.041	$ 0.161
May-13	777	$213.29	$104.58	$ 317.87	$ 0.274	$ 0.135	$ 0.409
June-13	2,101	$363.06	$223.50	$ 586.56	$ 0.173	$ 0.106	$ 0.279
July-13	388	$159.94	$130.34	$ 290.28	$ 0.412	$ 0.336	$ 0.748
August-13	863	$228.11	$142.05	$ 370.16	$ 0.264	$ 0.165	$ 0.429
September-13	623	$297.97	$399.53	$ 697.50	$ 0.478	$ 0.641	$ 1.119
October-13	767	$213.90	$804.44	$ 1,018.34	$ 0.279	$ 1.049	$ 1.328
November-13	1,564	$2,697.73	$4,785.41	$ 7,483.14	$ 1.725	$ 3.060	$ 4.784
December-13	9,266	$4,337.20	$9,872.70	$ 14,209.90	$ 0.468	$ 1.065	$ 1.534
January-14	18,284	$6,259.22	$10,900.70	$ 17,159.92	$ 0.342	$ 0.596	$ 0.939
February-14	18,586	$6,229.56	$14,953.19	$ 21,182.75	$ 0.335	$ 0.805	$ 1.140
March-14	23,392	$7,067.51	$7,296.13	$ 14,363.64	$ 0.302	$ 0.312	$ 0.614
April-14	12,027	$1,245.28	$3,362.89	$ 4,608.17	$ 0.104	$ 0.280	$ 0.383
May-14	5,298	$623.74	$320.69	$ 944.43	$ 0.118	$ 0.061	$ 0.178
June-14	491	$162.56	$ -	$ 162.56	$ 0.331	$ -	$ 0.331
Total (All)	**158,717.40**			**135,659.59**			**$ 0.855**
Total (12 Months)	**91,548.43**			**82,490.79**			**$ 0.901**

67-443-016-08

Month	Consumption (Therms)	Charges			Unit Costs		
		Delivery ($)	Supply ($)	Total ($)	Delivery ($/Therm)	Supply ($/Therm)	Total ($/Therm)
January-13	4,953	$1,897.91	$5,847.61	$ 7,745.52	$ 0.383	$ 1.181	$ 1.564
February-13	6,466	$2,260.78	$3,570.85	$ 5,831.63	$ 0.350	$ 0.552	$ 0.902
March-13	7,094	$2,697.24	$2,880.23	$ 5,577.47	$ 0.380	$ 0.406	$ 0.786
April-13	5,564	$730.57	$1,393.52	$ 2,124.09	$ 0.131	$ 0.250	$ 0.382
May-13	2,486	$402.72	$1,227.39	$ 1,630.11	$ 0.162	$ 0.494	$ 0.656
June-13	180	$129.46	$23.16	$ 152.62	$ 0.720	$ 0.129	$ 0.848
July-13	40	$110.00	$23.16	$ 133.16	$ 2.740	$ 0.577	$ 3.317
August-13	44	$110.49	$19.09	$ 129.58	$ 2.536	$ 0.438	$ 2.974
September-13	37	$109.59	$22.19	$ 131.78	$ 2.941	$ 0.596	$ 3.537
October-13	43	$110.33	$612.85	$ 723.18	$ 2.591	$ 14.391	$ 16.982
November-13	1,191	$1,300.85	$2,244.16	$ 3,545.01	$ 1.092	$ 1.883	$ 2.975
December-13	4,345	$1,973.65	$3,475.88	$ 5,449.53	$ 0.454	$ 0.800	$ 1.254
January-14	6,437	$2,417.08	$5,135.66	$ 7,552.74	$ 0.375	$ 0.798	$ 1.173
February-14	8,756	$2,866.43	$5,182.77	$ 8,049.20	$ 0.327	$ 0.592	$ 0.919
March-14	8,108	$2,646.90	$3,442.12	$ 6,089.02	$ 0.326	$ 0.425	$ 0.751
April-14	5,641	$655.45	$1,774.22	$ 2,429.67	$ 0.116	$ 0.315	$ 0.431
May-14	2,795	$392.58	$96.40	$ 488.98	$ 0.140	$ 0.034	$ 0.175
June-14	148	$120.03	$ -	$ 120.03	$ 0.813	$ -	$ 0.813
Total (All)	**64,328.06**			**57,903.32**			**$ 0.900**
Total (12 Months)	**37,585.15**			**34,841.88**			**$ 0.927**


Burlington City High School Gas Usage
Consumption (Therms)
Total ($)
Consumption (Therms)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
$35,000.00
$30,000.00
$25,000.00
$20,000.00
$15,000.00
$10,000.00
$5,000.00
$-
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13
Sep-13
Oct-13
Nov-13
Dec-13
Jan-14
Feb-14
Mar-14
Apr-14
May-14
Jun-14

PSE&G ELECTRIC SERVICE TERRITORY
Last Updated: 10/24/12

***CUSTOMER CLASS - R – RESIDENTIAL C – COMMERCIAL I –INDUSTRIAL**

Supplier	Telephone & Web Site	*Customer Class
AEP Energy, Inc. 309 Fellowship Road, Fl. 2 Mount Laurel, NJ 08054	(866) 258-3782 www.aepenergy.com	**C/I** **ACTIVE**
Alpha Gas and Electric, LLC 641 5th Street Lakewood, NJ 08701	(855) 553-6374 www.alphagasandelectric.com	**R/C** **ACTIVE**
Ambit Northeast, LLC 103 Carnegie Center Suite 300 Princeton, NJ 08540	(877)-30-AMBIT (877) 302-6248 www.ambitenergy.com	**R/C** **ACTIVE**
American Powernet Management, LP 437 North Grove St. Berlin, NJ 08009	(877) 977-2636 www.americanpowernet.com	**C** **ACTIVE**
Amerigreen Energy, Inc. 1463 Lamberton Road Trenton, NJ 08611	888-423-8357 www.amerigreen.com	**R/C** **ACTIVE**
AP Gas & Electric, LLC 10 North Park Place, Suite 420 Morristown, NJ 07960	(855) 544-4895 www.apge.com	**R/C/I** **ACTIVE**
Astral Energy LLC 16 Tyson Place Bergenfield, NJ 07621	(201) 384-5552 www.astralenergyllc.com	**R/C/I** **ACTIVE**
Barclays Capital Services, Inc. 70 Hudson Street Jersey City, NJ 07302-4585	(888) 978-9974 www.group.barclays.com	**C** **ACTIVE**
BBPC, LLC d/b/a Great Eastern Energy 116 Village Blvd. Suite 200 Princeton, NJ 08540	(888) 651-4121 www.greateasternenergy.com	**C/I** **ACTIVE**
Champion Energy Services, LLC 72 Avenue L Newark, NJ 07105	(877) 653-5090 www.championenergyservices.com	**R/C/I** **ACTIVE**

Choice Energy, LLC 4257 US Highway 9, Suite 6C Freehold, NJ 07728	888-565-4490 www.4choiceenergy.com	**R/C** **ACTIVE**
Clearview Electric, Inc. 505 Park Drive Woodbury, NJ 08096	(888) CLR-VIEW (800) 746-4702 www.clearviewenergy.com	**R/C/I** **ACTIVE**
Commerce Energy, Inc. 7 Cedar Terrace Ramsey, NJ 07446	1-866-587-8674 www.commerceenergy.com	**R** **ACTIVE**
ConEdison Solutions Cherry Tree Corporate Center 535 State Highway Suite 180 Cherry Hill, NJ 08002	(888) 665-0955 www.conedsolutions.com	**C/I** **ACTIVE**
Constellation NewEnergy, Inc. 900A Lake Street, Suite 2 Ramsey, NJ 07446	(866) 237-7693 www.constellation.com	**R/C/I** **ACTIVE**
Constellation Energy 900A Lake Street, Suite 2 Ramsey, NJ 07446	(877) 997-9995 www.constellation.com	**R** **ACTIVE**
Credit Suisse, (USA) Inc. 700 College Road East Princeton, NJ 08450	(212) 538-3124 www.creditsuisse.com	**C** **ACTIVE**
Direct Energy Business, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	(888) 925-9115 www.directenergybusiness.com	**C/I** **ACTIVE**
Direct Energy Services, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	(866) 348-4193 www.directenergy.com	**R** **ACTIVE**
Discount Energy Group, LLC 811 Church Road, Suite 149 Cherry Hill, New Jersey 08002	(800) 282-3331 www.discountenergygroup.com	**R/C** **ACTIVE**
Dominion Retail, Inc. **d/b/a Dominion Energy Solutions** 395 Route #70 West Suite 125 Lakewood, NJ 08701	(866) 275-4240 www.dom.com/products	**R/C** **ACTIVE**

DTE Energy Supply, Inc. One Gateway Center, Suite 2600 Newark, NJ 07102	(877) 332-2450 www.dtesupply.com	**C/I** **ACTIVE**
Energy.me Midwest LLC 90 Washington Blvd Bedminster, NJ 07921	(855) 243-7270 www.energy.me	**R/C/I** **ACTIVE**
Energy Plus Holdings LLC 309 Fellowship Road East Gate Center, Suite 200 Mt. Laurel, NJ 08054	(877) 866-9193 www.energypluscompany.com	**R/C** **ACTIVE**
Ethical Electric Benefit Co. d/b/a Ethical Electric 100 Overlook Center, 2nd Fl. Princeton, NJ 08540	(888) 444-9452 www.ethicalelectric.com	**R/C** **ACTIVE**
FirstEnergy Solutions 300 Madison Avenue Morristown, NJ 07962	(800) 977-0500 www.fes.com	**C/I** **ACTIVE**
Gateway Energy Services Corp. 44 Whispering Pines Lane Lakewood, NJ 08701	(800) 805-8586 www.gesc.com	**R/C/I** **ACTIVE**
GDF SUEZ Energy Resources NA, Inc. 333 Thornall Street Sixth Floor Edison, NJ 08837	(866) 999-8374 www.gdfsuezenergyresources.com	**C/I** **ACTIVE**
Glacial Energy of New Jersey, Inc. 75 Route 15 Building E Lafayette, NJ 07848	(888) 452-2425 www.glacialenergy.com	**C/I** **ACTIVE**
Global Energy Marketing LLC 129 Wentz Avenue Springfield, NJ 07081	(800) 542-0778 www.globalp.com	**C/I** **ACTIVE**
Green Mountain Energy Company 211 Carnegie Center Drive Princeton, NJ 08540	(866) 767-5818 www.greenmountain.com/commercial-home	**C/I** **ACTIVE**

Hess Corporation 1 Hess Plaza Woodbridge, NJ 07095	(800) 437-7872 www.hess.com	**C/I** **ACTIVE**
HIKO Energy, LLC 655 Suffern Road Teaneck, NJ 07666	(888) 264-4908 www.hikoenergy.com	**R/C** **ACTIVE**
HOP Energy, LLC d/b/a Metro Energy, HOP Fleet Fueling, HOP Energy Fleet Fueling 1011 Hudson Avenue Ridgefield, NJ 07657	(877) 390-7155 www.hopenergy.com	**R/C/I** **ACTIVE**
Hudson Energy Services, LLC 7 Cedar Street Ramsey, New Jersey 07446	(877) Hudson 9 www.hudsonenergyservices.com	**C** **ACTIVE**
IDT Energy, Inc. 550 Broad Street Newark, NJ 07102	(877) 887-6866 www.idtenergy.com	**R/C** **ACTIVE**
Independence Energy Group, LLC 3711 Market Street, 10th Fl. Philadelphia, PA 19104	(877) 235-6708 www.chooseindependence.com	**R/C** **ACTIVE**
Integrys Energy Services, Inc. 99 Wood Ave, South, Suite 802 Iselin, NJ 08830	(877) 763-9977 www.integrysenergy.com	**C/I** **ACTIVE**
Keil & Sons, Inc. **d/b/a Systrum Energy** 1 Bergen Blvd. Fairview, NJ 07022	(877) 797-8786 www.systrumenergy.com	**R/C/I** **ACTIVE**
Liberty Power Delaware, LLC 1973 Highway 34, Suite 211 Wall, NJ 07719	(866) 769-3799 www.libertypowercorp.com	**C/I** **ACTIVE**
Liberty Power Holdings, LLC 1973 Highway 34, Suite 211 Wall, NJ 07719	(866) 769-3799 www.libertypowercorp.com	**C/I** **ACTIVE**

Linde Energy Services 575 Mountain Avenue Murray Hill, NJ 07974	(800) 247-2644 www.linde.com	**C/I** **ACTIVE**
Marathon Power LLC 302 Main Street Paterson, NJ 07505	(888) 779-7255 www.mecny.com	**R/C/I** **ACTIVE**
MXenergy Electric Inc. 900 Lake Street Ramsey, NJ 07446	(800) 785-4374 www.mxenergy.com	**R/C/I** **ACTIVE**
NATGASCO, Inc. 532 Freeman St. Orange, NJ 07050	(973) 678-1800 x. 251 www.supremeenergyinc.com	**R/C** **ACTIVE**
NextEra Energy Services New Jersey, LLC 651 Jernee Mill Road Sayreville, NJ 08872	(877) 528-2890 Commercial (800) 882-1276 Residential www.nexteraenergyservices.com	**R/C/I** **ACTIVE**
New Jersey Gas & Electric 1 Bridge Plaza fl. 2 Fort Lee, NJ 07024	(866) 568-0290 www.NJGandE.com	**R/C** **ACTIVE**
Noble Americas Energy Solutions The Mac-Cali Building 581 Main Street, 8th Floor Woodbridge, NJ 07095	(877) 273-6772 www.noblesolutions.com	**C/I** **ACTIVE**
North American Power and Gas, LLC 222 Ridgedale Avenue Cedar Knolls, NJ 07927	(888) 313-9086 www.napower.com	**R/C/I** **ACTIVE**
Palmco Power NJ, LLC One Greentree Centre 10,000 Lincoln Drive East, Suite 201 Marlton, NJ 08053	(877) 726-5862 www.PalmcoEnergy.com	**R/C/I** **ACTIVE**
Pepco Energy Services, Inc. 112 Main St. Lebanon, NJ 08833	(800) ENERGY-9 (363-7499) www.pepco-services.com	**C/I** **ACTIVE**
Plymouth Rock Energy, LLC 338 Maitland Avenue Teaneck, NJ 07666	(855) 32-POWER (76937) www.plymouthenergy.com	**R/C/I** **ACTIVE**

PPL Energy Plus, LLC 811 Church Road Cherry Hill, NJ 08002	(800) 281-2000 www.pplenergyplus.com	**C/I** **ACTIVE**
Public Power & Utility of New Jersey, LLC 39 Old Ridgebury Rd. Suite 14 Danbury, CT 06810	(888) 354-4415 www.ppandu.com	**R/C/I** **ACTIVE**
Reliant Energy 211 Carnegie Center Princeton, NJ 08540	(877) 297-3795 (877) 297-3780 www.reliant.com/pjm	**R/C/I** **ACTIVE**
ResCom Energy LLC 18C Wave Crest Ave. Winfield Park, NJ 07036	(888) 238-4041 http://rescomenergy.com	**R/C/I** **ACTIVE**
Respond Power LLC 10 Regency CT Lakewood, NJ 08701	(877) 973-7763 www.respondpower.com	**R/C/I** **ACTIVE**
South Jersey Energy Company 1 South Jersey Plaza, Route 54 Folsom, NJ 08037	(800) 266-6020 www.southjerseyenergy.com	**C/I** **ACTIVE**
Sperian Energy Corp. 1200 Route 22 East, Suite 2000 Bridgewater, NJ 08807	(888) 682-8082	**R/C/I** **ACTIVE**
S.J. Energy Partners, Inc. 208 White Horse Pike, Suite 4 Barrington, N.J. 08007	(800) 695-0666 www.sjnaturalgas.com	**R/C** **ACTIVE**
Spark Energy, L.P. 2105 CityWest Blvd., Ste 100 Houston, Texas 77042	(800) 441-7514 www.sparkenergy.com	**R/C/I** **ACTIVE**
Sprague Energy Corp. 12 Ridge Road Chatham Township, NJ 07928	(800) 225-1560 www.spragueenergy.com	**C/I** **ACTIVE**
Starion Energy PA Inc. 101 Warburton Avenue Hawthorne, NJ 07506	(800) 600-3040 www.starionenergy.com	**R/C/I** **ACTIVE**
Stream Energy 309 Fellowship Rd., Suite 200 Mt. Laurel, NJ 08054	(877) 39-8150 www.streamenergy.net	**R** **ACTIVE**

UGI Energy Services, Inc. d/b/a GASMARK 224 Strawbridge Drive Suite 107 Moorestown, NJ 08057	(856) 273-9995 www.ugienergyservices.com	**C/I** **ACTIVE**
Verde Energy USA, Inc. 50 East Palisades Avenue Englewood, NJ 07631	(800) 388-3862 www.lowcostpower.com	**R/C/I** **ACTIVE**
Viridian Energy 2001 Route 46, Waterview Plaza Suite 310 Parsippany, NJ 07054	(866) 663-2508 www.viridian.com	**R/C/I** **ACTIVE**
Xoom Energy New Jersey, LLC 744 Broad Street Newark, NJ 07102	(888) 997-8979 www.xoomenergy.com	**R/C/I** **ACTIVE**
YEP Energy 89 Headquarters Plaza North #1463 Morristown, NJ 07960	(855) 363-7736 www.yepenergyNJ.com	**R/C/I** **ACTIVE**
Your Energy Holdings, LLC One International Boulevard Suite 400 Mahwah, NJ 07495-0400	(855) 732-2493 www.thisisyourenergy.com	**R/C/I** **ACTIVE**

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PSE&G GAS SERVICE TERRITORY
Last Updated: 10/24/12

***CUSTOMER CLASS** - **R – RESIDENTIAL C – COMMERCIAL I - INDUSTRIAL**

Supplier	Telephone & Web Site	*Customer Class
Ambit Northeast, LLC 103 Carnegie Center Suite 300 Princeton, NJ 08540	(877)-30-AMBIT (877) 302-6248 www.ambitenergy.com	**R/C** **ACTIVE**
Astral Energy LLC 16 Tyson Place Bergenfield, NJ 07621	888-850-1872 www.astralenergyllc.com	**R/C/I** **ACTIVE**
BBPC, LLC Great Eastern Energy 116 Village Blvd. Suite 200 Princeton, NJ 08540	888-651-4121 www.greateasternenergy.com	**C/I** **ACTIVE**
Clearview Electric Inc. **d/b/a Clearview Gas** 1744 Lexington Ave. Pennsauken, NJ 08110	800-746-4720 www.clearviewenergy.com	**R/C** **ACTIVE**
Colonial Energy, Inc. 83 Harding Road Wyckoff, NJ 07481	845-429-3229 www.colonialgroupinc.com	**C/I** **ACTIVE**
Commerce Energy, Inc. 7 Cedar Terrace Ramsey, NJ 07746	(888) 817-8572 www.commerceenergy.com	**R** **ACTIVE**
Compass Energy Services, Inc. 1085 Morris Avenue, Suite 150 Union, NJ 07083	866-867-8328 908-638-6605 www.compassenergy.net	**C/I** **ACTIVE**
ConocoPhillips Company 224 Strawbridge Drive, Suite 107 Moorestown, NJ 08057	800-646-4427 www.conocophillips.com	**C/I** **ACTIVE**
Consolidated Edison Energy, Inc. **d/b/a Con Edison Solutions** 535 State Highway 38, Suite 140 Cherry Hill, NJ 08002	888-686-1383 x2130 www.conedenergy.com	

Consolidated Edison Solutions, Inc. Cherry Tree Corporate Center 535 State Highway 38, Suite 140 Cherry Hill, NJ 08002	888-665-0955 www.conedsolutions.com	**C/I** **ACTIVE**
Constellation NewEnergy-Gas Division, LLC 900A Lake Street, Suite 2 Ramsey, NJ 07466	(800) 900-1982 www.constellation.com	**C/I** **ACTIVE**
Direct Energy Business, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	888-925-9115 www.directenergy.com	**C/I** **ACTIVE**
Direct Energy Services, LLP 120 Wood Avenue, Suite 611 Iselin, NJ 08830	866-348-4193 www.directenergy.com	**R** **ACTIVE**
Gateway Energy Services Corp. 44 Whispering Pines Lane Lakewood, NJ 08701	800-805-8586 www.gesc.com	**R/C/I** **ACTIVE**
UGI Energy Services, Inc. d/b/a GASMARK 224 Strawbridge Drive, Suite 107 Moorestown, NJ 08057	856-273-9995 www.ugienergyservices.com	**C/I** **ACTIVE**
Global Energy Marketing, LLC 129 Wentz Avenue Springfield, NJ 07081	800-542-0778 www.globalp.com	**C/I** **ACTIVE**
Great Eastern Energy 116 Village Blvd., Suite 200 Princeton, NJ 08540	888-651-4121 www.greateastern.com	**C/I** **ACTIVE**
Greenlight Energy 330 Hudson Street, Suite 4 Hoboken, NJ 07030	718-204-7467 www.greenlightenergy.us	**C** **ACTIVE**
Hess Energy, Inc. One Hess Plaza Woodbridge, NJ 07095	800-437-7872 www.hess.com	**C/I** **ACTIVE**
Hess Small Business Services, LLC One Hess Plaza Woodbridge, NJ 07095	888-494-4377 www.hessenergy.com	**C/I** **ACTIVE**
HIKO Energy, LLC 655 Suffern Road Teaneck, NJ 07666	(888) 264-4908 www.hikoenergy.com	**R/C** **ACTIVE**

Hudson Energy Services, LLC 7 Cedar Street Ramsey, NJ 07446	877- Hudson 9 www.hudsonenergyservices.com	**C** **ACTIVE**
IDT Energy, Inc. 550 Broad Street Newark, NJ 07102	877-887-6866 www.idtenergy.com	**R/C** **ACTIVE**
Integrys Energy Services – Natural Gas, LLC 99 Wood Avenue South Suite #802 Iselin, NJ 08830	800-536-0151 www.integrysenergy.com	**C/I** **ACTIVE**
Intelligent Energy 2050 Center Avenue, Suite 500 Fort Lee, NJ 07024	800-927-9794 www.intelligentenergy.org	**R/C/I** **ACTIVE**
Keil & Sons, Inc. **d/b/a Systrum Energy** 1 Bergen Blvd. Fairview, NJ 07022	1-877-797-8786 www.systrumenergy.com	**R/C/I** **ACTIVE**
Major Energy Services, LLC 10 Regency CT Lakewood, NJ 08701	888-625-6760 www.majorenergy.com	**R/C/I** **ACTIVE**
Marathon Power LLC 302 Main Street Paterson, NJ 07505	888-779-7255 www.mecny.com	**R/C/I** **ACTIVE**
Metromedia Energy, Inc. 6 Industrial Way Eatontown, NJ 07724	800-828-9427 www.metromediaenergy.com	**C** **ACTIVE**
Metro Energy Group, LLC 14 Washington Place Hackensack, NJ 07601	888-53-Metro www.metroenergy.com	**R/C** **ACTIVE**
MxEnergy, Inc. 900 Lake Street Ramsey, NJ 07446	800-758-4374 www.mxenergy.com	**R/C/I** **ACTIVE**
NATGASCO (Mitchell Supreme) 532 Freeman Street Orange, NJ 07050	800-840-4GAS www.natgasco.com	**C** **ACTIVE**
New Energy Services LLC 101 Neptune Avenue Deal, New Jersey 07723	800-660-3643 www.newenergyservicesllc.com	**R/C/I** **ACTIVE**

New Jersey Gas & Electric 1 Bridge Plaza, Fl. 2 Fort Lee, NJ 07024	866-568-0290 www.NJGandE.com	**R/C** **ACTIVE**
Noble Americas Energy Solutions The Mac-Cali Building 581 Main Street, 8th fl. Woodbridge, NJ 07095	877-273-6772 www.noblesolutions.com	**C/I** **ACTIVE**
North American Power & Gas, LLC d/b/a North American Power 197 Route 18 South Ste. 3000 East Brunswick, NJ 08816	(888) 313-9086 www.napower.com	**R/C/I** **ACTIVE**
Palmco Energy NJ, LLC One Greentree Centre 10,000 Lincoln Drive East, Suite 201 Marlton, NJ 08053	877-726-5862 www.PalmcoEnergy.com	**R/C/I** **ACTIVE**
Pepco Energy Services, Inc. 112 Main Street Lebanon, NJ 08833	800-363-7499 www.pepco-services.com	**C/I** **ACTIVE**
Plymouth Rock Energy, LLC 338 Maitland Avenue Teaneck, NJ 07666	855-32-POWER (76937) www.plymouthenergy.com	**R/C/I** **ACTIVE**
PPL EnergyPlus, LLC 811 Church Road - Office 105 Cherry Hill, NJ 08002	800-281-2000 www.pplenergyplus.com	**C/I** **ACTIVE**
Respond Power LLC 10 Regency CT Lakewood, NJ 08701	(877) 973-7763 www.respondpower.com	**R/C/I** **ACTIVE**
South Jersey Energy Company 1 South Jersey Plaza, Route 54 Folsom, NJ 08037	800-266-6020 www.southjerseyenergy.com	**C/I** **ACTIVE**
S.J. Energy Partners, Inc. 208 White Horse Pike, Suite 4 Barrington, NJ 08007	800-695-0666 www.sjnaturalgas.com	**R/C** **ACTIVE**
Spark Energy Gas, L.P. 2105 CityWest Blvd, Ste 100 Houston, Texas 77042	800-411-7514 www.sparkenergy.com	**R/C/I** **ACTIVE**
Sprague Energy Corp. 12 Ridge Road Chatham Township, NJ 07928	855-466-2842 www.spragueenergy.com	**C/I** **ACTIVE**

Stuyvesant Energy LLC 10 West Ivy Lane, Suite 4 Englewood, NJ 07631	800-640-6457 www.stuyfuel.com	**C** **ACTIVE**
Stream Energy New Jersey, LLC 309 Fellowship Road Suite 200 Mt. Laurel, NJ 08054	(973) 494-8097 www.streamenergy.net	**R/C** **ACTIVE**
Systrum Energy 1 Bergen Blvd. Fairview, NJ 07022	877-797-8786 www.systrumenergy.com	**R/C/I** **ACTIVE**
Woodruff Energy 73 Water Street Bridgeton, NJ 08302	800-557-1121 www.woodruffenergy.com	**R/C/I** **ACTIVE**
Woodruff Energy US LLC 73 Water Street, P.O. Box 777 Bridgeton, NJ 08302	856-455-1111 800-557-1121 www.woodruffenergy.com	**C/I** **ACTIVE**
Xoom Energy New Jersey, LLC 744 Broad Street Newark, NJ 07102	888-997-8979 www.xoomenergy.com	**R/C/I** **ACTIVE**
Your Energy Holdings, LLC One International Boulevard Suite 400 Mahwah, NJ 07495-0400	(855) 732-2493 www.thisisyourenergy.com	**R/C/I** **ACTIVE**

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APPENDIX B

Equipment Inventory

CHA Project # 28886
Burlington City High School
Burlington City Public Schools

Description	QTY	Manufacturer Name	Model No.	Serial No.	Equipment Type / Utility	Capacity/Size /Efficiency	Efficiency	Location	Areas/Equipment Served	Date Installed	Remaining Useful Life (years)	Other Info.
Boiler	6	Aerco	Benchmark 2.0	N/A	Condensing Boilers	2000 MBH energy input	87% -96% efficiency based on the return water temperature	Mechanical Room	Whole Building	2007	18	
Chiller	2	Carrier	30RBA16066	0906Q80890	Air Cooled Chiller	~200 ton	unknown, it is estimated that EER is about 10	Outside Ground	Whole Building	2007	18	
HHW Pump Motors	2	Baldor	EM2515T	N/A	Electric Motor	20HP	93.60%	Mechanical Room	Whole Building	2007	13	
CHW Pump Motors	2	Baldor	EM2539T	N/A	Electric Motor	40HP	94.60%	Mechanical Room	Whole Building	2007	13	
AHU-1	1	ANNEXAIR	ERP-E-07-HW-H-C	0833-02-030806	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	7200 CFM, 10HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.5HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	A-Wing Classroms	2007	13	
AHU-2	1	ANNEXAIR	ERP-E-02-HW-H-C	0813-02-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	7201 CFM, 10HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.5HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	A-Wing Classroms	2007	13	
AHU-3	1	ANNEXAIR	ERP-E-03-HW-H-C	0813-03-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	7202 CFM, 10HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.5HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	A-Wing Classroms	2007	13	
AHU-4	1	ANNEXAIR	CRP-E-05-HW-H-C	0833-04-082205	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	5600 CFM, 10HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	E-Wing Cafeteria	2007	13	
AHU-5	1	ANNEXAIR	ERP-E-05-HW-H-C	0813-05-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	4400 CFM, 7.5HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Cafeteria	2007	13	
AHU-6	1	ANNEXAIR	ERP-E-06-HW-H-C	0813-06-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	12800 CFM, 15HP Supply Fan Motor and 10 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.5HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Gymnasium	2007	13	
AHU-7	1	ANNEXAIR	ERP-E-07-HW-H-C	0813-07-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	4400 CFM, 7.5HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Classroms	2007	13	
AHU-8	1	ANNEXAIR	ERP-E-08-HW-H-C	0813-08-082906	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	4401 CFM, 7.5HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Classroms	2007	13	
AHU-9	1	ANNEXAIR	ERP-E-09-HW-H-C	0813-09-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	9600 CFM, 15HP Supply Fan Motor and 7.5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Office	2007	13	
AHU-10	1	ANNEXAIR	ERP-E-10-HW-H-C	0813-10-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	4400 CFM, 7.5HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Lobbies and Common Areas	2007	13	
AHU-11	1	ANNEXAIR	ERP-E-06-HW-H-C	0813-06-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	12800 CFM, 15HP Supply Fan Motor and 10 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.5HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Gymnasium	2007	13	
AHU-12	1	ANNEXAIR	ERP-E-07-HW-H-C	0813-07-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	4400 CFM, 7.5HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Classroms	2007	13	
AHU-13	1	ANNEXAIR	ERP-E-08-HW-H-C	0813-08-082906	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	4401 CFM, 7.5HP Supply Fan Motor and 5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Classroms	2007	13	
AHU-14	1	ANNEXAIR	ERP-E-09-HW-H-C	0813-09-082905	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	9600 CFM, 15HP Supply Fan Motor and 7.5 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	Office	2007	13	
AHU-15	1	ANNEXAIR	ERP-E-03-HW-H-C	0833-15-032086	RTU with CHW Coil and HHW Coil and Heat Recovery Wheel	3000 CFM, 5HP Supply Fan Motor and 3 HP Return Fan Motor, Heat Recovery Wheel Motor is 0.25HP	Estimated EER of 10, 87% -96% Heating Efficiency	Roof	E-Wing Locker Room	2007	13	
DHW Heater	1	Lochinvar	CFN1261PN	G06HOO 188387	DHW gas fired heater	1,260 MBH input, 115 gallon storage tank	~80%	Mechanical Room	Building	2007	13	

Energy Audit of Burlington City High School
CHA Project No.28886
Existing Lighting & Audit Input

Cost of Electricity: **$0.141** **$/kWh**
$3.54 **$/kW**

			EXISTING CONDITIONS										
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Retrofit Control	
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
35LED	A100A	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	Main Entrance	Hallways	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	3750	675	NONE	
35LED	Main Entrance	Hallways	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.45	SW	3750	1,688	NONE	
25	Main Entrance	Hallways	2	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.06	SW	3750	210	NONE	
35LED	104	Offices	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	OCC	3750	3,038	NONE	Wall Mounted
55LED	104	Offices	7	2T 17 R F 3 (ELE)	F23ILL	47	0.33	OCC	3750	1,234	NONE	
55LED	104A	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	
35LED	104H	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	OCC	3750	338	NONE	
55LED	104C	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	
55LED	104G	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	Wall Mounted
55LED	104F	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	
55LED	104D	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	
32LED	Hallway	Hallways	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3750	450	NONE	
25	Media Center Entrance	Hallways	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.17	SW	3750	630	NONE	
55LED	Media Center	Media Center	30	2T 17 R F 3 (ELE)	F23ILL	47	1.41	SW	3750	5,288	NONE	
25	Media Center	Media Center	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.56	SW	3750	2,100	NONE	
15LED	Media Center	Media Center	58	S 32 C F 2 (ELE)	F42LL	60	3.48	SW	3750	13,050	NONE	
35LED	106A	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	106B	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	106E	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	OCC	3750	1,013	NONE	
35LED	106F	Offices	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	OCC	3750	2,025	NONE	
15LED	106H	Offices	15	S 32 C F 2 (ELE)	F42LL	60	0.90	OCC	3750	3,375	NONE	
35LED	106D	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	OCC	3750	1,013	NONE	
25	Conference Room	Conference	12	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.34	SW	3750	1,260	NONE	
15LED	Conference Room	Conference	3	S 32 C F 2 (ELE)	F42LL	60	0.18	SW	3750	675	NONE	
35LED	108	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	110	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
20LED	Boys	Restroom	5	S 28 P F 1 (ELE)	F41ILL	31	0.16	OCC	3750	581	NONE	
25	Boys	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
20LED	Girls	Restroom	5	S 28 P F 1 (ELE)	F41ILL	31	0.16	OCC	3750	581	NONE	
25	Girls	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
35LED	112	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	OCC	3750	4,050	NONE	
35LED	116	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	OCC	3750	4,050	NONE	
35LED	Hallway	Hallways	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.62	SW	3750	6,075	NONE	
25	Hallway	Hallways	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.56	SW	3750	2,100	NONE	
35LED	105	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	OCC	3750	4,050	NONE	
35LED	105 Storage	Storage Areas	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	3750	1,013	C-OCC	
35LED	107	Classrooms	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	OCC	3750	5,063	NONE	
35LED	109	Classrooms	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	OCC	3750	5,063	NONE	
35LED	111	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	OCC	3750	4,050	NONE	
35LED	111 Storage	Storage Areas	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	3750	1,013	C-OCC	
35LED	B-Wing Hallway	Hallways	38	T 32 R F 3 (ELE)	F43ILL/2	90	3.42	SW	3750	12,825	NONE	
35LED	133	Offices	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	OCC	3750	3,038	NONE	
35LED	132B	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
55LED	132B	Offices	2	2T 17 R F 3 (ELE)	F23ILL	47	0.09	OCC	3750	353	NONE	
55LED	130C	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	
35LED	130B	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	
55LED	130B	Offices	4	2T 17 R F 3 (ELE)	F23ILL	47	0.19	OCC	3750	705	NONE	
25	Restroom	Restroom	1	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.03	OCC	3750	105	NONE	
20LED	Restroom	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.06	OCC	3750	233	NONE	
35LED	130D	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	126P	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
55LED	126F	Offices	2	2T 17 R F 3 (ELE)	F23ILL	47	0.09	OCC	3750	353	NONE	
35LED	126F	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	
35LED	126M	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	126K	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	126J	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	126L	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
20LED	Men's	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.06	OCC	3750	233	NONE	
25	126E	Conference	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.17	SW	3750	630	NONE	
15LED	126E	Conference	3	S 32 C F 2 (ELE)	F42LL	60	0.18	SW	3750	675	NONE	
35LED	126C	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	Locked
35LED	126 Hallway	Hallways	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	3750	2,700	NONE	
55LED	126 Hallway	Hallways	5	2T 17 R F 3 (ELE)	F23ILL	47	0.24	SW	3750	881	NONE	
35LED	126A	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	
35LED	126B	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	
35LED	120K	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	
35LED	120J	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	OCC	3750	1,350	NONE	
55LED	120G	Offices	10	2T 17 R F 3 (ELE)	F23ILL	47	0.47	OCC	3750	1,763	NONE	
35LED	120G	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	120D	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	

Energy Audit of Burlington City High School
CHA Project No.28886
Existing Lighting & Audit Input

Cost of Electricity: **$0.141** **$/kWh**
$3.54 **$/kW**

			EXISTING CONDITIONS								Retrofit Control	
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
35LED	120N	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	OCC	3750	338	NONE	
35LED	120E	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	OCC	3750	338	NONE	
35LED	120C	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
55LED	120A	Offices	10	2T 17 R F 3 (ELE)	F23ILL	47	0.47	OCC	3750	1,763	NONE	
35LED	120A	Offices	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.45	OCC	3750	1,688	NONE	
71	119	Storage Areas	4	I 60	I60/1	60	0.24	SW	3750	900	C-OCC	
15LED	121	Classrooms	20	S 32 C F 2 (ELE)	F42LL	60	1.20	OCC	3750	4,500	NONE	
35LED	121 storage	Storage Areas	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	3750	1,013	C-OCC	
35LED	123	Classrooms	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	OCC	3750	5,400	NONE	
20LED	Boys	Restroom	9	S 28 P F 1 (ELE)	F41ILL	31	0.28	OCC	3750	1,046	NONE	
25	Boys	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
20LED	Girls	Restroom	9	S 28 P F 1 (ELE)	F41ILL	31	0.28	OCC	3750	1,046	NONE	
25	Girls	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
35LED	127	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	129	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	131	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	133	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
32LED	C-Wing Hallway	Hallways	36	1T 32 R F 2 (ELE)	F42LL	60	2.16	SW	3750	8,100	NONE	
35LED	140	Classrooms	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.16	OCC	3750	8,100	NONE	
35LED	142	Classrooms	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.16	OCC	3750	8,100	NONE	
35LED	144	Classrooms	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	OCC	3750	2,700	NONE	
35LED	146	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	148	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
25	Restroom	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
20LED	Restroom	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.22	OCC	3750	814	NONE	
25	Restroom	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
20LED	Restroom	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.22	OCC	3750	814	NONE	
35LED	Janitor	Storage Areas	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	3750	675	C-OCC	
35LED	154	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	141	Classrooms	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	OCC	3750	3,038	NONE	
35LED	143	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	145	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	147	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	149	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	151	Classrooms	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	OCC	3750	2,025	NONE	
35LED	153	Classrooms	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	OCC	3750	2,025	NONE	
35LED	155	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
32LED	D-Wing Hallway	Hallways	36	1T 32 R F 2 (ELE)	F42LL	60	2.16	SW	3750	8,100	NONE	
32LED	156	Classrooms	53	1T 32 R F 2 (ELE)	F42LL	60	3.18	OCC	3750	11,925	NONE	
71	156 S	Storage Areas	2	I 60	I60/1	60	0.12	SW	3750	450	C-OCC	
71	156 S	Storage Areas	1	I 60	I60/1	60	0.06	SW	3750	225	C-OCC	
71	156 S	Storage Areas	2	I 60	I60/1	60	0.12	SW	3750	450	C-OCC	
32LED	158	Classrooms	53	1T 32 R F 2 (ELE)	F42LL	60	3.18	OCC	3750	11,925	NONE	
35LED	158 S	Storage Areas	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	3750	675	C-OCC	
35LED	158 S	Storage Areas	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	3750	675	C-OCC	
32LED	160	Classrooms	54	1T 32 R F 2 (ELE)	F42LL	60	3.24	OCC	3750	12,150	NONE	
71	160 S	Storage Areas	1	I 60	I60/1	60	0.06	SW	3750	225	C-OCC	
71	160 S	Storage Areas	1	I 60	I60/1	60	0.06	SW	3750	225	C-OCC	
71	160 S	Storage Areas	2	I 60	I60/1	60	0.12	SW	3750	450	C-OCC	
146LED	Burr Gym	Gymnasium	38	High Bay MH 400	MH400/1	458	17.40	SW	3750	65,265	C-OCC	
265LED	Burr Gym	Gymnasium	20	Gym HB 8L CFL	CF42/8-L	376	7.52	SW	3750	28,200	C-OCC	
15LED	Locker Room	Locker	9	S 32 C F 2 (ELE)	F42LL	60	0.54	SW	3750	2,025	C-OCC	
71	Locker Room	Locker	10	I 60	I60/1	60	0.60	SW	3750	2,250	C-OCC	
71	Shower	Locker	8	I 60	I60/1	60	0.48	SW	3750	1,800	C-OCC	
71	Hallway	Hallways	3	I 60	I60/1	60	0.18	SW	3750	675	NONE	
71	Teacher Locker	Locker	2	I 60	I60/1	60	0.12	SW	3750	450	C-OCC	
32LED	Coach Office	Offices	4	1T 32 R F 2 (ELE)	F42LL	60	0.24	OCC	3750	900	NONE	
71	Team Locker	Locker	6	I 60	I60/1	60	0.36	SW	3750	1,350	C-OCC	
32LED	Director Office	Offices	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
32LED	Entrance	Hallways	6	1T 32 R F 2 (ELE)	F42LL	60	0.36	SW	3750	1,350	NONE	
15LED	Girl Locker Room	Locker	9	S 32 C F 2 (ELE)	F42LL	60	0.54	SW	3750	2,025	C-OCC	Locked
71	Girl Locker Room	Locker	10	I 60	I60/1	60	0.60	SW	3750	2,250	C-OCC	Locked
71	Shower	Locker	8	I 60	I60/1	60	0.48	SW	3750	1,800	C-OCC	Locked
71	Hallway	Hallways	3	I 60	I60/1	60	0.18	SW	3750	675	NONE	Locked
146LED	Morris Gym	Gymnasium	40	High Bay MH 400	MH400/1	458	18.32	SW	3750	68,700	C-OCC	
265LED	Morris Gym	Gymnasium	4	Gym HB 8L CFL	CF42/8-L	376	1.50	SW	3750	5,640	C-OCC	
32LED	E-Wing Hallway	Hallways	22	1T 32 R F 2 (ELE)	F42LL	60	1.32	SW	3750	4,950	NONE	
32LED	169	Storage Areas	4	1T 32 R F 2 (ELE)	F42LL	60	0.24	SW	3750	900	C-OCC	
71	171	Mechanical Room	10	I 60	I60/1	60	0.60	SW	3750	2,250	NONE	
32LED	175	Storage Areas	4	1T 32 R F 2 (ELE)	F42LL	60	0.24	SW	3750	900	C-OCC	
32LED	172	Storage Areas	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3750	450	C-OCC	

Energy Audit of Burlington City High School
CHA Project No.28886
Existing Lighting & Audit Input

Cost of Electricity: **$0.141** **$/kWh**
$3.54 **$/kW**

			EXISTING CONDITIONS									Retrofit Control	
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
71	172	Storage Areas	12	I 60	I60/1	60	0.72	SW	3750	2,700	C-OCC	
32LED	Café	Cafeteria	56	1T 32 R F 2 (ELE)	F42LL	60	3.36	SW	3750	12,600	C-OCC	
55LED	Café	Cafeteria	8	2T 17 R F 3 (ELE)	F23ILL	47	0.38	SW	3750	1,410	C-OCC	
32LED	Café	Cafeteria	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3750	1,800	C-OCC	
55LED	Kitchen	Kitchen	16	2T 17 R F 3 (ELE)	F23ILL	47	0.75	SW	3750	2,820	NONE	
32LED	Kitchen	Kitchen	5	1T 32 R F 2 (ELE)	F42LL	60	0.30	SW	3750	1,125	NONE	
32LED	Dishwasher	Kitchen	6	1T 32 R F 2 (ELE)	F42LL	60	0.36	SW	3750	1,350	NONE	
32LED	Office	Offices	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	OCC	3750	1,800	NONE	
32LED	F-Wing Hallway	Hallways	20	1T 32 R F 2 (ELE)	F42LL	60	1.20	SW	3750	4,500	NONE	
55LED	F-Wing Hallway	Hallways	24	2T 17 R F 3 (ELE)	F23ILL	47	1.13	SW	3750	4,230	NONE	
35LED	184	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
35LED	186	Classrooms	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.62	OCC	3750	6,075	NONE	
35LED	188	Classrooms	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.17	OCC	3750	4,388	NONE	
35LED	190	Classrooms	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	OCC	3750	5,063	NONE	
35LED	192	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	OCC	3750	4,725	NONE	
71	165	Mechanical Room	5	I 60	I60/1	60	0.30	SW	3750	1,125	NONE	
15LED	165	Mechanical Room	8	S 32 C F 2 (ELE)	F42LL	60	0.48	SW	3750	1,800	NONE	
32LED	181	Offices	10	1T 32 R F 2 (ELE)	F42LL	60	0.60	OCC	3750	2,250	NONE	
35LED	181	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	181	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	OCC	3750	675	NONE	
35LED	189	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	OCC	3750	4,050	NONE	
35LED	189	Classrooms	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	OCC	3750	2,363	NONE	
35LED	193	Classrooms	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.34	OCC	3750	8,775	NONE	
35LED	196	Classrooms	40	T 32 R F 3 (ELE)	F43ILL/2	90	3.60	OCC	3750	13,500	NONE	
215LED	Auditorium	Auditorium	30	High Bay MH 250	MHPS/SCWA/250/1	288	8.64	SW	3750	32,400	C-OCC	
25	Auditorium	Auditorium	18	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.50	SW	3750	1,890	C-OCC	
15LED	Annex Classroom	Classrooms	2	S 32 C F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
15LED	Annex Classroom	Classrooms	2	S 32 C F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
15LED	Annex Classroom	Classrooms	2	S 32 C F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
15LED	Annex Classroom	Classrooms	2	S 32 C F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
15LED	Annex Classroom	Classrooms	2	S 32 C F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
15LED	Annex Classroom	Classrooms	6	S 32 C F 2 (ELE)	F42LL	60	0.36	OCC	3750	1,350	NONE	
35LED	Hallway	Hallways	10	T 32 R F 3 (ELE)	F43ILL/2	90	0.90	SW	3750	3,375	NONE	
15LED	Restroom	Restroom	1	S 32 C F 2 (ELE)	F42LL	60	0.06	OCC	3750	225	NONE	
15LED	202	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	204	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	206	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	208	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	210	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
20LED	Boys	Restroom	10	S 28 P F 1 (ELE)	F41ILL	31	0.31	OCC	3750	1,163	NONE	
25	Boys	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
20LED	Girls	Restroom	10	S 28 P F 1 (ELE)	F41ILL	31	0.31	OCC	3750	1,163	NONE	
25	Girls	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
15LED	201	Classrooms	10	S 32 C F 2 (ELE)	F42LL	60	0.60	OCC	3750	2,250	NONE	
15LED	203	Classrooms	15	S 32 C F 2 (ELE)	F42LL	60	0.90	OCC	3750	3,375	NONE	
15LED	205	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	207	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	209	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	211	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
15LED	214	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
32LED	Hallway	Hallways	32	1T 32 R F 2 (ELE)	F42LL	60	1.92	SW	3750	7,200	NONE	
15LED	Boiler Room	Mechanical Room	13	S 32 C F 2 (ELE)	F42LL	60	0.78	SW	3750	2,925	NONE	
15LED	240	Classrooms	6	S 32 C F 2 (ELE)	F42LL	60	0.36	OCC	3750	1,350	NONE	
15LED	242	Classrooms	15	S 32 C F 2 (ELE)	F42LL	60	0.90	OCC	3750	3,375	NONE	
25	242	Classrooms	8	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.22	OCC	3750	840	NONE	
15LED	244	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	OCC	3750	5,400	NONE	
15LED	246	Classrooms	2	S 32 C F 2 (ELE)	F42LL	60	0.12	OCC	3750	450	NONE	
15LED	248	Classrooms	27	S 32 C F 2 (ELE)	F42LL	60	1.62	OCC	3750	6,075	NONE	
25	Boys	Restroom	4	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.11	OCC	3750	420	NONE	
20LED	Boys	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.06	OCC	3750	233	NONE	
25	Girls	Restroom	4	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.11	OCC	3750	420	NONE	
20LED	Girls	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.06	OCC	3750	233	NONE	
15LED	252	Classrooms	12	S 32 C F 2 (ELE)	F42LL	60	0.72	OCC	3750	2,700	NONE	
25	252	Classrooms	5	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.14	OCC	3750	525	NONE	
15LED	243	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	SW	3750	5,400	OCC	
15LED	245	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	SW	3750	5,400	OCC	
15LED	247	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	SW	3750	5,400	OCC	
15LED	249	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	SW	3750	5,400	OCC	
15LED	251	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	SW	3750	5,400	OCC	
15LED	253	Classrooms	24	S 32 C F 2 (ELE)	F42LL	60	1.44	SW	3750	5,400	OCC	
32LED	Hallway	Hallways	32	1T 32 R F 2 (ELE)	F42LL	60	1.92	SW	3750	7,200	NONE	

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	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
15LED	221	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	223	Classrooms	10	S 32 C F 2 (ELE)	F42LL	60	0.60	OCC	3750	2,250	NONE	
15LED	225	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
20LED	Boys	Restroom	8	S 28 P F 1 (ELE)	F41ILL	31	0.25	OCC	3750	930	NONE	
25	Boys	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
20LED	Girls	Restroom	8	S 28 P F 1 (ELE)	F41ILL	31	0.25	OCC	3750	930	NONE	
25	Girls	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.08	OCC	3750	315	NONE	
15LED	229	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	231	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	233	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	235	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	222	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	224	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	226	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	228	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	230	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	232	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
15LED	234	Classrooms	14	S 32 C F 2 (ELE)	F42LL	60	0.84	OCC	3750	3,150	NONE	
32LED	Hallway	Hallways	38	1T 32 R F 2 (ELE)	F42LL	60	2.28	SW	3750	8,550	NONE	
25	236	Classrooms	5	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.14	OCC	3750	525	NONE	
15LED	236	Classrooms	6	S 32 C F 2 (ELE)	F42LL	60	0.36	OCC	3750	1,350	NONE	
	Total		**2,530**				**209.96**			**787,335**		

APPENDIX C

ECM Calculations

Burlington City Public Schools - Burlington City High School
CHA Project Numer: 28886

Rate of Discount (used for NPV) 3.0%

Utility Costs		Yearly Usage	Metric Ton Carbon Dioxide Equivalent	Building Area	Annual Utility Cost		
					Electric	Natural Gas	Fuel Oil
$ 0.151	$/kWh blended		0.000420205	207,701	$ 336,537	$ 117,333	
$ 0.141	$/kWh supply	2,230,474	0.000420205				
$ 3.54	$/kW	754.4	0				
$ 0.91	$/Therm	129,134	0.00533471				
Estimated $ 7.50	$/kgals		0				
	$/Gal						

Burlington City High School

Recommend? Y or N		Item	Savings kW	kWh	therms	No. 2 Oil gal	Water kgal	$	Cost	Simple Payback	Life Expectancy	Equivalent CO2 (Metric tons)	NJ Smart Start Incentives	Direct Install Eligible (Y/N)	Payback w/ Incentives	Simple Projected Lifetime Savings kW	kWh	therms	kgal/yr	$	ROI	NPV	IRR
Y	ECM-1	Replace Gym AHUs with Heat Recovery RTUs	0.0	(7,143)	8,822	0	0	6,941	$ 119,086	17.2	25	44.1	$ 1,950	N	16.9	0.0	(178,582)	220,553	0	$ 173,517	0.5	$3,723	3.3%
Y	ECM-2	Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs	0.0	5,897	669	0	0	1,499	$ 16,000	10.7	15	6.0	$ -	N	10.7	0.0	88,453	10,034	0	$ 22,478	0.4	$1,889	4.6%
Y	ECM-3	Install a Central Web-Based DDC System for all Schools, Integrate the Existing Individual DDC System and Retro-Commissioning	0.0	23,876	1,353	0	0	4,835	$ 157,638	32.6	15	17.2	$ 3,500	N	31.9	0.0	358,136	20,290	0	$ 72,522	(0.5)	($96,420)	-8.2%
Y	ECM-4	Replace Domestic Hot Water Heaters with Condensing DHW Heater	0.0	0	1,325	0	0	1,204	$ 24,698	20.5	15	7.1	$ 2,000	N	18.8	0.0	0	19,872	0	$ 18,063	(0.3)	($8,322)	-2.7%
Y	ECM-5	Install Variable Speed Kitchen Hood Exhaust System	0.0	8,937	2,191	0	0	3,342	$ 42,073	12.6	15	15.4	$ -	N	12.6	0.0	134,057	32,872	0	$ 50,123	0.2	($2,182)	2.3%
Y	ECM-6	Install Control on the Walk-in Fridges and Freezers	0.0	6,225	0	0	0	940	$ 20,625	21.9	15	2.6	$ -	N	21.9	0.0	93,379	0	0	$ 14,100	(0.3)	($9,403)	-4.4%
Y	ECM-7	Replace Dishwasher Electric Booster Heater With Gas Booster Heater	6	2,110	(90)	0	0	485	$ 19,000	39.2	15	0.4	$ 4,200	N	30.5	95.0	31,653	(1,350)	0	$ 7,586	(0.6)	($9,014)	-7.8%
N	ECM-L1	Lighting Replacements / Upgrades	123	459,555	0	0	0	70,003	$ 608,259	8.7	15	193.1	$ -	N	8.7	1,838.2	6,893,325	0	0	$ 1,118,978	0.8	$227,432	7.8%
N	ECM-L2	Install Lighting Controls (Add Occupancy Sensors)	0	27,719	0	0	0	3,908	$ 9,950	2.5	15	11.6	$ 1,310	N	2.2	0.0	415,785	0	0	$ 62,784	5.3	$38,018	45.1%
Y	ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	123	467,990	0	0	0	71,192	$ 618,208	8.7	15	196.7	$ 1,310	N	8.7	1,838.2	7,019,850	0	0	$ 1,138,083	0.8	$232,991	7.8%
		Total (Does Not Include ECM-L1 & ECM-L2)	**128.9**	**507,892**	**14,270**	**0**	**0**	**$ 90,437**	**$ 1,017,327**	**11.2**	**16.3**	**290**	**$ 12,960**		**11.1**	**1,933**	**7,546,944**	**302,271**	-	**$ 1,496,472**	**0.5**	**113,262**	**4.7%**
		Recommended Measures (highlighted green above)	**128.9**	**507,892**	**14,270**	**0**	**0**	**$ 90,437**	**$ 1,017,327**	**11.2**	**16.3**	**290**	**$ 12,960**	**0**	**11.1**	**1,933**	**7,546,944**	**302,271**	-	**$ 1,496,472**	**0.5**	**113,262**	**4.7%**
		% of Existing	**17%**	**23%**	**11%**	**0**	**0**																

City:	Atlantic City, NJ
Occupied Hours/Week	48

Temp	Enthalpy h (Btu/lb)	Bin Hours	Building Operating Hours	Auditorium Occupied Hours	Gymnasium Occupied Hours	Library Occupied Hours	Classrooms Occupied Hours
102.5							
97.5	38.6	17	5	0	0	0	0
92.5	38.5	61	17	0	0	0	0
87.5	37.5	132	38	0	0	0	0
82.5	34.8	344	98	0	0	0	0
77.5	32.4	566	162	0	0	0	0
72.5	31.3	755	216	0	0	0	0
67.5	27.8	780	223	0	0	0	0
62.5	24.7	889	254	0	0	0	0
57.5	21.8	742	212	0	0	0	0
52.5	19.0	710	203	0	0	0	0
47.5	17.0	642	183	0	0	0	0
42.5	15.0	795	227	0	0	0	0
37.5	12.8	784	224	0	0	0	0
32.5	10.7	682	195	0	0	0	0
27.5	8.7	345	99	0	0	0	0
22.5	7.1	229	65	0	0	0	0
17.5	5.4	189	54	0	0	0	0
12.5	4.1	70	20	0	0	0	0
7.5	2.5	22	6	0	0	0	0
2.5	1.3	6	2	0	0	0	0
-2.5							
-7.5							

Multipliers	
Material:	1.027
Labor:	1.246
Equipment:	1.124

Heating System Efficiency	80%
Cooling Eff (kW/ton)	1.3

Heating		
Hours	4,427	Hrs
Weighted Avg	40	F
Avg	26	F

Cooling		
Hours	4,333	Hrs
Weighted Avg	68	F
Avg	78	F

Burlington City Public Schools - Burlington City High School
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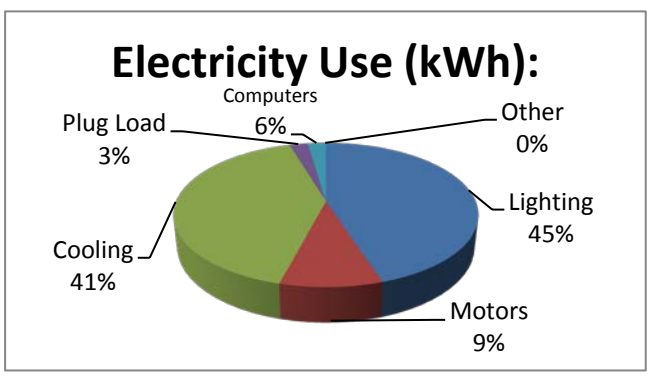
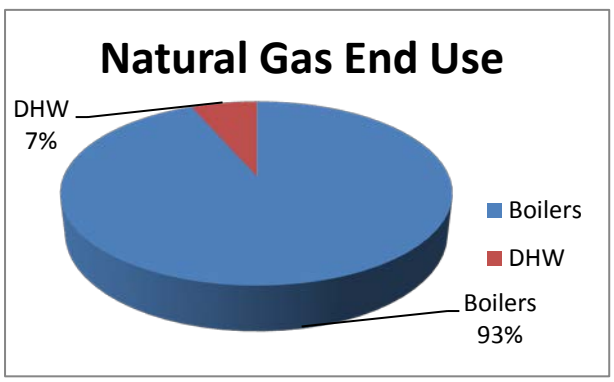
Burlington City High School

Utility End Use Analysis			
Electricity Use (kWh):		**Notes/Comments:**	
2,230,474	Total	Based on utility analysis	
980,000	Lighting	From Lighting Calculations	44%
200,000	Motors	Estimated	9%
900,000	Cooling	Estimated	40%
50,000	Plug Load	Estimated	2%
50,000	Computers	Estimated	2%
474	Other	Remaining	0%
Natural Gas Use (Therms):		**Notes/Comments:**	
129,134	Total	Based on utility analysis	
120,720	Boilers	Therms/SF x Square Feet Served	93%
8,414	DHW	Based on utility analysis	7%





Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-1 Replace Gym AHUs with Heat Recovery RTUs

Currently the air handlers for the gym are exhausting approximately 70F building air. Most of the air handling units in high school and middle school have heat recovery coils, however these two do not have heat recovery loop. This measure investigates replacing the units with units equipped with heat recovery loop.

Equipment Tag	Equipment Description	Supply CFM	Cooling Capacity (Btu/h)	Heating Capacity (Btu/h)
RTU-6	RTU	12,800	200,000	250,000
RTU-11	RTU	12,800	200,000	250,000

Utility Costs

Electric Rate	$0.15	/ kWh
Natural Gas Rate	$0.91	/ Therm

Building and System Inputs

Heating Efficiency	80%	
Cooling Efficiency	1.30	kW/ton
Average Indoor Air Temperature	70	*F
Air Density	0.073	lbm/ft^3
Specific Heat	0.24	BTU/lbm*F

RTU-6	Maximum Exhaust Flow	3,840	CFM
RTU-11	Maximum Exhaust Flow	3,840	CFM
Total Average Exhaust Flow*		7,680	CFM

**Fan affinity exponent of 3 was used to remain conservative.*

Fan Size	0.5	HP
Recovery Factor	55%	
Additional Static on AHU Fans	0.10	inches W.C.
Estimated Fan Efficiency	0.7	
Monthly Demand Savings	0	kW

Avg Outdoor Air Temp. Bins °F	Bin Hours	Temperature Difference	Potential Recoverable Energy (MMBTU)	Energy Actually Recovered or Rejected (MMBTU)	Cooling Energy Saved (kWh)	Heating Energy Saved (MMBTU)	Additional Fan Energy Required (kWh)	Additional Fan Energy Required (kWh)	Net Savings or Cost
A	B	C	D	E	F	G	H	I	J
102.5	0	-33	0.0	0.0	0	0	0	0	$0
97.5	17	-28	-3.8	-2.1	225	0	6	21	$30
92.5	61	-23	-11.1	-6.1	660	0	23	76	$85
87.5	132	-18	-18.6	-10.3	1,111	0	49	164	$136
82.5	344	-13	-34.7	-19.1	2,068	0	128	428	$228
77.5	566	-8	-34.3	-18.8	2,042	0	211	704	$170
72.5	755	-3	-15.2	-8.4	908	0	282	939	($47)
67.5	780	3	15.7	8.7	0	11	291	970	($92)
62.5	889	8	53.8	29.6	0	37	331	1,105	$119
57.5	742	13	74.9	41.2	0	51	277	923	$287
52.5	710	18	100.3	55.2	0	69	265	883	$454
47.5	642	23	116.6	64.1	0	80	239	798	$572
42.5	795	28	176.5	97.1	0	121	296	988	$909
37.5	784	33	205.7	113.1	0	141	292	975	$1,094
32.5	682	38	206.5	113.6	0	142	254	848	$1,124
27.5	345	43	118.4	65.1	0	81	129	429	$656
22.5	229	48	87.8	48.3	0	60	85	285	$493
17.5	189	53	80.1	44.1	0	55	70	235	$454
12.5	70	58	32.5	17.9	0	22	26	87	$186
7.5	22	63	11.1	6.1	0	8	8	27	$64
2.5	6	68	3.3	1.8	0	2	2	7	$19
-2.5	0	73	0.0	0.0	0	0	0	0	$0
-7.5	0	78	0.0	0.0	0	0	0	0	$0
-12.5	0	83	0.0	0.0	0	0	0	0	$0
-17.5	0	88	0.0	0.0	0	0	0	0	$0
TOTALS					7,015	882	3,266	10,892	$6,941

If Loop is Run Year Round

Total Electric Savings	**-7,143**	**kWh**
Total Natural Gas Savings	**8,822**	**therms**
Total Natural Gas Used by Building	**129,134**	**therms**
% Saved	**7%**	

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-1 Replace Gym AHUs with Heat Recovery RTUs- Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
RTU with Heat Recovery Coils	2	ea	$ 25,000	$ 10,000	$ -	$ 51,350	$ 24,920	$ -	$ 76,270	Estimated based on RS Means
Controls Modifications and Additions	1	ea	$ 3,000	$ 5,000		$ 3,081	$ 6,230	$ -	$ 9,311	Estimated based on RS Means
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

$ 85,581	Subtotal	
$ 8,558	10%	Contingency
$ 9,414	10%	Contractor O&P
$ 15,533	15%	Engineering
$ 119,086	**Total**	

Burlington City Public Schools - Burlington City High School
CHA Project Numer: 28886
Burlington City High School

ECM-2 Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs

AIR HANDLER	AREA SERVED	CFM	OA CFM	% OA	
RTU-4	Cafeteria	5,600	1,680	30%	<<Estimated
RTU-5	Auditorium	4,400	1,320	30%	<<Estimated
RTU-6	Gymnasium	12,800	3,840	30%	<<Estimated
RTU-11	Gymnasium	12,800	3,840	30%	<<Estimated
			10,680	*CFM*	

ECM Description: This ECM evaluates the energy savings associated with reducing the quantity of outdoor air being introduced to large space(s) such as gymnasiums, cafeterias and auditoriums. The reduction in outdoor air ventilation is achieved using carbon dioxide sensors installed within the space(s) that monitor the amount of CO2 being expelled by the occupants. The CO2 level threshold is measured against the CO2 level in the outdoor air and is maintianed at 700 parts per million(ppm) in accordance with ASHRAE guidelines.

Electric Cost	$ 0.15	/kWh
Natural Gas Cost	$ 0.91	/therm
Facility Ventilation Heating Load	403,704	BTU/Hour[1,2,3]
Facility Ventilation Cooling Load	115,344	BTU/Hour[1,2,3]
Existing Ventilation Heating Usage	22,298	Therms[2]
Existing Ventilation Cooling Usage	196,561	kWh[3]
Proposed Ventilation Heating Usage	21,629	Therms[7]
Proposed Ventilation Cooling Usage	190,664	kWh[7]
Total heating savings	669	**Therms**
Total cooling savings	5,897	**kWh**
Total cost savings	$ 1,499	
Estimated Total Project Cost	$16,000	[8]
Simple Payback	10.7	**years**

Note: costs are used for enrgy savings calulations only. Do not use for procurment

Assumptions

1	10,680	OA AHU airflow based exsiting equipment model numbers
2	35	°F, Assumed average heating Δt (mixed air and supply)
3	10	°F, Assumed average cooling Δt (mixed air and supply)
4	81%	Heating Efficiency - %
5	1.3	Cooling Efficiency - kW/Ton
6	4,474	AHU run time per heating/cooling season bin data
7	3%	Estimated savings for DCV based on NJ Protocols
8	$ 16,000	estimated measure cost for installation of sensors and associated controls

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-2 Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
Re-Program HVAC Controls to allow DCV	1	EA	$ 2,000	$ 3,000		$ 2,054	$ 3,738	$ -	$ 5,792	RS Means 2012
CO2 Sensor	4	EA	$ 500	$ 1,000		$ 2,054	$ 4,984	$ -	$ 7,038	RS Means 2012
						$ -	$ -	$ -	$ -	

$ 12,830	Subtotal
$ 3,208	25% Contingency
$ 16,000	**Total**

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

Burlington City Public Schools - Burlington City High School
CHA Project Numer: 28886
Burlington City High School

ECM-3 Install a Central Web-Based DDC System for all Schools, Integrate the Existing Individual DDC System and Retro-Commissioning

Description: This ECM evaluates the energy savings associated with upgrading the existing school stand alone control system to a full campus wide wireless direct digital control system that enable remote automatic control, monitoring and alarming of all HVAC equipment. The energy savings percentage is based on past performance of similar buildings which have a fully functioning DDC control system.

Building Information:

207,701	Sq Footage	$0.15	$/kWh Blended
Y	Cooling	$0.91	$/Therm
Y	Heating		

FULL DDC - TEMPERATURE SETBACK SAVINGS CALCULATION

EXISTING CONDITIONS		
Heating		
Heating Season Facility Temp	72	F
Weekly Occupied Hours	48	hrs
Heating Season Setback Temp	67	F
Heating Season % Savings per Degree Setback	1%	
Annual Boiler Capacity	2,000	Mbtu/yr
Connected Heating Load Capacity	2,000,000	Btu/hr
Equivalent Full Load Heating Hours	100	hrs
Heating System Efficiency	80%	
Cooling		
Cooling Season Facility Temp	72	F
Weekly Occupied Hours	48	hrs
Cooling Season Setback Temp	77	F
Cooling Season % Savings per Degree Setback	1%	
Connected Cooling Load Capacity	200	Tons
Equivalent Full Load Cooling Hours	100	hrs
Cooling Equipment EER	10.0	
SAVINGS		
Natural Gas Savings	86	Therms
Cooling Electricity Savings	10,081	kWh

Nighttime Setback

EXISTING CONDITIONS		
Heating		
Heating Season Facility Temp	72	F
Weekly Occupied Hours	48	hrs
Heating Season Setback Temp	65	F
Heating Season % Savings per Degree Setback	1%	
Annual Boiler Capacity	2,000	Mbtu/yr
Connected Heating Load Capacity	2,000,000	Btu/hr
Equivalent Full Load Heating Hours	50	hrs
Heating Equipment Efficiency	80%	
Cooling		
Cooling Season Facility Temp	72	F
Weekly Occupied Hours	48	hrs
Cooling Season Setback Temp	80	F
Cooling Season % Savings per Degree Setback	1%	
Connected Cooling Load Capacity	200	Tons
Equivalent Full Load Cooling Hours	50	hrs
Cooling Equipment EER	10.0	
SAVINGS		
Natural Gas Savings	60	Therms[3]
Cooling Electricity Savings	4,794	kWh

FULL DDC - ADDITIONAL CONTROLS SAVINGS CALCULATION

EXISTING CONDITIONS		
Existing Facility Total Electric usage	2,230,474	kWh
Existing Facility Total Gas usage	129,134	Therms
Existing Facility Cooling Electric usage	900,000.0	kWh[1]
Existing Facility Heating Natural Gas usage	120,720	Therms[2]
PROPOSED CONDITIONS		
Proposed Facility Cooling Electric Savings	9,000	kWh
Proposed Facility Natural Gas Savings	1,207	Therms
SAVINGS		
Electric Savings	9,000	**kWh**
Natural Gas Savings	1,207	**Therms**

Assumptions

1	40%	of facility total electricity dedicated to Cooling; based on utility information
2	93%	of facility total natural gas dedicated to Heating; based on utility information
3	1%	The building already has a DDC control system but not calibrated or comminssioned. Therefore, it is estimated there would be 1% savings after upgrading the system

COMBINED SAVINGS		
Natural Gas Savings	1,353	Therms
Cooling Electricity Savings	23,876	kWh
Total Cost Savings	$ 4,835	
Estimated Total Project Cost	$ 157,638	
Simple Payback	32.6	Yrs

Savings calculation formulas for setback are taken from NJ Protocols document for Occupancy Controlled Thermostats
Savings calculations for additional controls are estimated based on the level of control to be added and prior experience

Burlington City Public Schools - Burlington City High School
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Burlington City High School

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.00

ECM-3 Install a Central Web-Based DDC System for all Schools, Integrate the Existing Individual DDC System and Retro-Commissioning - Cost

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
Sensors Recalibration	1	ea	$ 10,000	$ 20,000		$ 10,270	$ 24,920	$ -	$ 35,190	Estimated
Controller & Programming	1	ls	$ 40,000	$ 40,000		$ 41,080	$ 49,840	$ -	$ 90,920	Estimated
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$ 126,110	Subtotal
$ 31,528	25% Contingency
$ 157,638	**Total**

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-4 Replace Domestic Hot Water Heaters with Condensing DHW Heater

Description: This ECM evaluates the energy savings associated with replacing a gas fired tank type water heater with an equivalent capacity instantaneous water heater.

Item	Value	Units	Formula/Comments
Avg. Monthly Utility Demand by Water Heater	701	Therms/month	Calculated from utility bill
Total Annual Utility Demand by Water Heater	841,400	MBTU/yr	1therm = 100 MBTU
Existing DHW Heater Efficiency	80%		Per manufacturer nameplate
Total Annual Hot Water Demand (w/ standby losses)	673,120	MBTU/yr	
Existing Tank Size	115	Gallons	Per manufacturer nameplate
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	Per building personnel
Room Temperature	72	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	1.2	MBH	
Annual Standby Hot Water Load	10,512	MBTU/yr	
New Tank Size	200	Gallons	Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	
Room Temperature	72	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	2.1	MBH	
Annual Standby Hot Water Load	17,958	MBTU/yr	
Total Annual Hot Water Demand	680,566	MBTU/yr	
Proposed Avg. Hot water heater efficiency	96%		Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Proposed Fuel Use	7,089	Therns	Standby Losses and inefficient DHW heater eliminated
Utility Cost	$0.91	$/Therm	
Existing Operating Cost of DHW	$7,648	$/yr	
Proposed Operating Cost of DHW	$6,444	$/yr	

Savings Summary:

Utility	Energy Savings	Cost Savings
Therms/yr	1,325	$1,204

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-4 Replace Domestic Hot Water Heaters with Condensing DHW Heater - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
DHW Heater Removal	1	LS		$ 50		$ -	$ 62	$ -	$ 62	RS Means 2012
High Efficiency Gas-Fired DHW Heater	1	EA	$ 12,000	$ 1,000		$ 12,324	$ 1,246	$ -	$ 13,570	Estimated
Miscellaneous Electrical	1	LS	$ 300			$ 308	$ -	$ -	$ 308	RS Means 2012
Venting Kit	1	EA	$ 450	$ 650		$ 462	$ 810	$ -	$ 1,272	RS Means 2012
Miscellaneous Piping and Valves	1	LS	$ 2,000	$ 2,000		$ 2,054	$ 2,492	$ -	$ 4,546	Estimated

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

$ 19,758	Subtotal
$ 4,940	25% Contingency
$ 24,698	**Total**

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-5 Install Variable Speed Kitchen Hood Exhaust System

Description: This ECM evaluates the thermal and electrical energy savings associated with the implementation of a variable flow controlled exhaust hood (Fan) and make-up air unit. The Hood controller uses infrared heat sensors to detect the level of smoke produced by the cooking operations and automatically adjsustes the exhasut fan and make-up air fan to provide the proper amount of air flow needed to remove the particulate from the hood. The system uses a default minimum air flow value to ensure that smoke particulate is removed at all times during cooking operations.

Item	Value	Units	Formula/Comments	
Fuel Cost	$ 0.91	/ Therm		
Electricity Cost	$ 0.15	/kWh		
FORMULA CONSTANTS				
Conversion	0.746	HP/kW		
Constant	24	hrs/day		
Constant	1.08	(btu/hr)/CFM·F		
Conversion	3,412	btu/kWh		
ELECTRIC FAN SAVINGS				
Facility Type	School			
Quantity of Kitchen Hood Fan Motors	3			Q
Kitchen Hood Fan Motor HP	3.0	HP	Estimated	HP
Motor Load Factor	0.90		NJ Protocols	LF
Efficiency of Fan Motor(s)	87.5%			FEFF
Kitchen Hood Fan Run Hours	2,080			RH
Fan Motor Power Reduction (From VFD)	0.584			PR
Fan Electricity Savings	8,388	kWh		
HEATING SAVINGS				
Kitchen is Heated?	Y			
Square Footage of Kitchen	800	ft^2	Estimated	SF
Code Required Ventilation Rate	0.70	CFM/ft^2	NJ Protocols	CFM/SF
Ventilation Oversize Factor	1.40		NJ Protocols	OF
Flow Reductuion (from VFD/Control)	0.310			FR
Heating Degree Day	2,783		NJ Protocols Table	HDD
Heating System Efficiency	80%		AFUE (%)	HEFF
Heating Savings	219	MMbtu		
Heating Savings	2,191	Therms		
COOLING SAVINGS				
Kitchen is Cooled?	Y			
Cooling Degree Day	893		NJ Protocols Table	CDD
Cooling System Efficiency	3.00		COP	CEFF
Cooling Savings	550	kWh		
TOTAL SAVINGS				
Electricity Savings	8,937	kWh		
Fuel Savings	2,191	Therms		
Cost Savings	$ 3,342			

Savings calculation formulas are taken from NJ Protocols document for Kitchen Hood

Burlington City Public Schools - Burlington City High School
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ECM-5 Install Variable Speed Kitchen Hood Exhaust System - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
MeLink Kitchen Hood Control System	1	ea	$ 9,500	$ 9,000		$ 9,757	$ 11,214	$ -	$ 20,971	Vendor Est
3.0 HP VFDs (1-exhaust fan)	1	ea	$ 1,575	$ 431		$ 1,618	$ 536	$ -	$ 2,154	RS Means 2012
3.0 HP Motor	1	ea	$ 326	$ 79		$ 335	$ 98	$ -	$ 433	RS Means 2012
Reprogram DDC system	1	ea	$ 100	$ 1,200		$ 103	$ 1,495	$ -	$ 1,598	Estimated
Electrical - misc.	1	ls	$ 1,000	$ 6,000		$ 1,027	$ 7,476	$ -	$ 8,503	RS Means 2012
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

$ 33,658	Subtotal
$ 8,415	25% Contingency
$ 42,073	**Total**

Burlington City Public Schools - Burlington City High School
CHA Project Numer: 28886
Burlington City High School

ECM-6 Install Control on the Walk-in Fridges and Freezers

ECM Description :
For kitchens that contain walk-in coolers and freezers, CoolTrol is a controller that reduces energy consumption by controlling off of dewpoint temperature. Compressor cycling is reduced and the evaporator fans run 25% to 80% less. Door and frame heaters are also installed and controlled by store dew point temperature; this can reduce run time by up to 95% in coolers and 60% in freezers. The evaporator fan motors are also replaced with hi-efficiency fan motors saving 40% to 70% in energy. The proposed system comprises of an anti-sweat door controller, evaporator fan motor replacement and CoolTrol Cooler Control System.

Utility Cost

$0.15 $/kWh Blended

EXISTING CONDITIONS			
Walk-In Freezer(s)			
Existing Freezer Controls?	N		
Quantity of Walk-In Freezers	1		
Nameplate Amps of Freezer Evaporator Fan	3.3		AmpsEF
Nameplate Volts of Freezer Evaporator Fan	208		VoltsEF
Phase of Evaporator Fan	1		PhaseEF
Power Factor of Evaporator Fan	0.55		PFEF
Operating Hours	8,760	hrs	
Load Reduction	65%		LR
Electricity Savings (Evaporator Fan)	2,150	kWh	kWhEF
Electricity Savings (Evaporator Fan Reduced Heat)	963	kWh	kWhRH
Total Walk-In Freezer(s) Electricity Savings	3,113	kWh	
Walk-In Cooler(s)			
Existing Cooler Controls?	N		
Quantity of Walk-In Coolers	1		
Nameplate Amps of Cooler Evaporator Fan	3.3		
Nameplate Volts of Cooler Evaporator Fan	208		
Phase of Evaporator Fan	1		
Power Factor of Evaporator Fan	0.55		
Operating Hours	8,760	hrs	
Load Reduction	65%		
Electricity Savings (Evaporator Fan)	2,150	kWh	
Electricity Savings (Evaporator Fan Reduced Heat)	963	kWh	
Total Walk-In Cooler(s) Electricity Savings	3,113	kWh	
SAVINGS			
Total Electricity Savings	**6,225**	**kWh**	
Total Cost Savings	**$ 940**		
Estimated Cost	$ 20,625		
Simple Payback	21.9	**years**	

Savings calculation formulas are taken from NJ Protocols document for Walk-in Controller

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-6 Install Control on the Walk-in Fridges and Freezers - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									$ -	
Turnkey Walk-In Controller & Equipment	1	EA	$ 10,000	$ 5,000	$ -	$ 10,270	$ 6,230	$ -	$ 16,500	Vendor Estimate
						$ -	$ -	$ -	$ -	

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

$ 16,500	Subtotal
$ 4,125	25% Contingency
$ 20,625	**Total**

Burlington City Public Schools - Burlington City High School
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ECM-7 Replace Dishwasher Electric Booster Heater With Gas Booster Heater

Description: This ECM evaluates the energy savings associated with replacing an electrically powered dishwasher booster heater with and equivalently sized natural gas booster heater

Item	Value	Units	Formula/Comments
Baseline Fuel Cost	$ 0.91	/ Therm	
Electricity Cost	$ 0.14	$/kWh	
Demand Cost	$ 3.54	$/kWh	
FORMULA CONSTANTS			
CF	0.3		Coincidence Factor (NJ Protocols)
EFLH	100		Equivalent Full Load Hours (NJ Protocols)
PROPOSED EQUIPMENT			
Input Rating	90,000	btu/hr	
Efficiency	80%		
SAVINGS			
Electricity Savings	2,110	kWh	
Demand Savings	6	kW	
Additional Fuel Usag	(90)	Therms	
Fuel Cost Savings	$ 485		

Savings calculation formulas are taken from NJ Protocols document for Booster Heater

Burlington City Public Schools - Burlington City High School
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Burlington City High School

ECM-7 Replace Dishwasher Electric Booster Heater With Gas Booster Heater - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
Natural Gas Fired Booster Heater	1	EA	$ 6,000	$ 5,000		$ 6,162	$ 6,230	$ -	$ 12,392	Estimated
Venting, Piping, Ect.	1	LS	$ 1,500	$ 1,000		$ 1,541	$ 1,246	$ -	$ 2,787	RS Means 2012
						$ -	$ -	$ -	$ -	

$ 15,179	Subtotal
$ 3,795	25% Contingency
$ 19,000	**Total**

**Cost Estimates are for Energy Savings calculations only, do not use for procurement

Burlington City Public Schools - Burlington City High School
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Burlington City High School

New Jersey Pay For Performance Incentive Program

Note: The following calculation is based on the New Jersey Pay For Performance Incentive Program per April, 2012.
Building must have a minimum average electric demand of 100 kW. This minimum is waived for buildings owned by local governements or non-profit organizations.

At a minimum, all recommended measures were used for this calculation. To qualify for P4P incentives, the following P4P requirements must be met:

- At least 15% source energy savings
- No more than 50% savings from lighting measures
- Scope includes more than one measure
- Project has at least a 10% internal rate of return
- At least 50% of the source energy savings must come from investor-owned electricity and/or natural gas (note: exemption for fuel conversions)

Total Building Area (Square Feet)	207,701
Is this audit funded by NJ BPU (Y/N)	Yes

Board of Public Utilites (BPU)

Incentive #1		
Audit is funded by NJ BPU	$0.05	$/sqft

	Annual Utilities	
	kWh	Therms
Existing Cost (from utility)	$336,537	$117,333
Existing Usage (from utility)	2,230,474	129,134
Proposed Savings	507,892	14,270
Existing Total MMBtus	20,526	
Proposed Savings MMBtus	3,160	
% Energy Reduction	**15.4%**	
Proposed Annual Savings	$90,437	

	Min (Savings = 15%)		Increase (Savings > 15%)		Max Incentive		Achieved Incentive	
	$/kWh	$/therm	$/kWh	$/therm	$/kWh	$/therm	$/kWh	$/therm
Incentive #2	$0.09	$0.90	$0.005	$0.05	$0.11	$1.25	$0.09	$0.92
Incentive #3	$0.09	$0.90	$0.005	$0.05	$0.11	$1.25	$0.09	$0.92

	Incentives $		
	Elec	Gas	Total
Incentive #1	$0	$0	$10,385
Incentive #2	$46,719	$13,126	$59,845
Incentive #3	$46,719	$13,126	$59,845
Total All Incentives	**$93,438**	**$26,253**	**$130,076**

Total Project Cost	$1,017,327

		Allowable Incentive
% Incentives #1 of Utility Cost*	2.3%	$10,385
% Incentives #2 of Project Cost**	5.9%	$59,845
% Incentives #3 of Project Cost**	5.9%	$59,845
Total Eligible Incentives***	**$130,076**	
Project Cost w/ Incentives	$887,252	

Project Payback (years)	
w/o Incentives	w/ Incentives
11.2	9.8

* Maximum allowable incentive is 50% of annual utility cost if not funded by NJ BPU, and %25 if it is.
** Maximum allowable amount of Incentive #2 is 25% of total project cost.
Maximum allowable amount of Incentive #3 is 25% of total project cost.
*** Maximum allowable amount of Incentive #1 is $50,000 if not funded by NJ BPU, and $25,000 if it is.
Maximum allowable amount of Incentive #2 & #3 is $1 million per gas account and $1 million per electric account; maximum 2 million per project

Energy Audit of Burlington City High School
CHA Project No.28886
ECM-L1 Lighting Replacements

		EXISTING CONDITIONS							RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
35LED	A100A	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.2	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	Main Entrance	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	3750	675	2	T 59 R LED	RTLED38	38	0.1	SW	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	Main Entrance	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	3750	1,688	5	T 59 R LED	RTLED38	38	0.2	SW	3,750	713	975	0.3	$ 148.52	$ 1,181.25	$0	8.0	8.0
25	Main Entrance	2	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	SW	3750	210	2	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	SW	3,750	210	-	0.0	$ -	$ -	$0		#DIV/0!
35LED	104	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	OCC	3750	3,038	9	T 59 R LED	RTLED38	38	0.3	OCC	3,750	1,283	1,755	0.5	$ 267.34	$ 2,126.25	$0	8.0	8.0
55LED	104	7	2T 17 R F 3 (ELE)	F23ILL	47	0.3	OCC	3750	1,234	7	2T 25 R LED	2RTLED	25	0.2	OCC	3,750	656	578	0.2	$ 87.97	$ 1,417.50	$0	16.1	16.1
55LED	104A	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
35LED	104H	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	OCC	3750	338	1	T 59 R LED	RTLED38	38	0.0	OCC	3,750	143	195	0.1	$ 29.70	$ 236.25	$0	8.0	8.0
55LED	104C	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
55LED	104G	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
55LED	104F	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
55LED	104D	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
32LED	Hallway	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	3750	450	2	4 ft LED Tube	200732x2	30	0.1	SW	3,750	225	225	0.1	$ 34.27	$ 467.40	$0	13.6	13.6
25	Media Center Entrance	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	SW	3750	630	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	SW	3,750	630	-	0.0	$ -	$ -	$0		#DIV/0!
55LED	Media Center	30	2T 17 R F 3 (ELE)	F23ILL	47	1.4	SW	3750	5,288	30	2T 25 R LED	2RTLED	25	0.8	SW	3,750	2,813	2,475	0.7	$ 377.01	$ 6,075.00	$0	16.1	16.1
25	Media Center	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	SW	3750	2,100	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	SW	3,750	2,100	-	0.0	$ -	$ -	$0		#DIV/0!
15LED	Media Center	58	S 32 C F 2 (ELE)	F42LL	60	3.5	SW	3750	13,050	58	4 ft LED Tube	200732x2	30	1.7	SW	3,750	6,525	6,525	1.7	$ 993.94	$ 13,554.60	$0	13.6	13.6
35LED	106A	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	106B	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	106E	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	OCC	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	OCC	3,750	428	585	0.2	$ 89.11	$ 708.75	$0	8.0	8.0
35LED	106F	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	OCC	3750	2,025	6	T 59 R LED	RTLED38	38	0.2	OCC	3,750	855	1,170	0.3	$ 178.22	$ 1,417.50	$0	8.0	8.0
15LED	106H	15	S 32 C F 2 (ELE)	F42LL	60	0.9	OCC	3750	3,375	15	4 ft LED Tube	200732x2	30	0.5	OCC	3,750	1,688	1,688	0.5	$ 257.05	$ 3,505.50	$0	13.6	13.6
35LED	106D	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	OCC	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	OCC	3,750	428	585	0.2	$ 89.11	$ 708.75	$0	8.0	8.0
25	Conference Room	12	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.3	SW	3750	1,260	12	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.3	SW	3,750	1,260	-	0.0	$ -	$ -	$0		#DIV/0!
15LED	Conference Room	3	S 32 C F 2 (ELE)	F42LL	60	0.2	SW	3750	675	3	4 ft LED Tube	200732x2	30	0.1	SW	3,750	338	338	0.1	$ 51.41	$ 701.10	$0	13.6	13.6
35LED	108	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	110	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
20LED	Boys	5	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	581	5	4 ft LED Tube	200732x1	15	0.1	OCC	3,750	281	300	0.1	$ 45.70	$ 726.00	$0	15.9	15.9
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3,750	315	-	0.0	$ -	$ -	$0		#DIV/0!
20LED	Girls	5	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	581	5	4 ft LED Tube	200732x1	15	0.1	OCC	3,750	281	300	0.1	$ 45.70	$ 726.00	$0	15.9	15.9
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3,750	315	-	0.0	$ -	$ -	$0		#DIV/0!
35LED	112	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$0	8.0	8.0
35LED	116	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$0	8.0	8.0
35LED	Hallway	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.6	SW	3750	6,075	18	T 59 R LED	RTLED38	38	0.7	SW	3,750	2,565	3,510	0.9	$ 534.67	$ 4,252.50	$0	8.0	8.0
25	Hallway	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	SW	3750	2,100	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	SW	3,750	2,100	-	0.0	$ -	$ -	$0		#DIV/0!
35LED	105	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$0	8.0	8.0
35LED	105 Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	SW	3,750	428	585	0.2	$ 89.11	$ 708.75	$0	8.0	8.0
35LED	107	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,063	15	T 59 R LED	RTLED38	38	0.6	OCC	3,750	2,138	2,925	0.8	$ 445.56	$ 3,543.75	$0	8.0	8.0
35LED	109	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,063	15	T 59 R LED	RTLED38	38	0.6	OCC	3,750	2,138	2,925	0.8	$ 445.56	$ 3,543.75	$0	8.0	8.0
35LED	111	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$0	8.0	8.0
35LED	111 Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	SW	3,750	428	585	0.2	$ 89.11	$ 708.75	$0	8.0	8.0
35LED	B-Wing Hallway	38	T 32 R F 3 (ELE)	F43ILL/2	90	3.4	SW	3750	12,825	38	T 59 R LED	RTLED38	38	1.4	SW	3,750	5,415	7,410	2.0	$ 1,128.75	$ 8,977.50	$0	8.0	8.0
35LED	133	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	OCC	3750	3,038	9	T 59 R LED	RTLED38	38	0.3	OCC	3,750	1,283	1,755	0.5	$ 267.34	$ 2,126.25	$0	8.0	8.0
35LED	132B	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
55LED	132B	2	2T 17 R F 3 (ELE)	F23ILL	47	0.1	OCC	3750	353	2	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	188	165	0.0	$ 25.13	$ 405.00	$0	16.1	16.1
55LED	130C	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
35LED	130B	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
55LED	130B	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	375	330	0.1	$ 50.27	$ 810.00	$0	16.1	16.1
25	Restroom	1	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.0	OCC	3750	105	1	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.0	OCC	3,750	105	-	0.0	$ -	$ -	$0		#DIV/0!
20LED	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	OCC	3750	233	2	4 ft LED Tube	200732x1	15	0.0	OCC	3,750	113	120	0.0	$ 18.28	$ 290.40	$0	15.9	15.9
35LED	130D	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	126P	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
55LED	126F	2	2T 17 R F 3 (ELE)	F23ILL	47	0.1	OCC	3750	353	2	2T 25 R LED	2RTLED	25	0.1	OCC	3,750	188	165	0.0	$ 25.13	$ 405.00	$0	16.1	16.1
35LED	126F	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
35LED	126M	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	126K	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	126J	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	126J	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
20LED	Men's	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	OCC	3750	233	2	4 ft LED Tube	200732x1	15	0.0	OCC	3,750	113	120	0.0	$ 18.28	$ 290.40	$0	15.9	15.9
25	126E	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	SW	3750	630	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	SW	3,750	630	-	0.0	$ -	$ -	$0		#DIV/0!
15LED	126E	3	S 32 C F 2 (ELE)	F42LL	60	0.2	SW	3750	675	3	4 ft LED Tube	200732x2	30	0.1	SW	3,750	338	338	0.1	$ 51.41	$ 701.10	$0	13.6	13.6
35LED	126E	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
35LED	126 Hallway	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	3750	2,700	8	T 59 R LED	RTLED38	38	0.3	SW	3,750	1,140	1,560	0.4	$ 237.63	$ 1,890.00	$0	8.0	8.0
55LED	126 Hallway	5	2T 17 R F 3 (ELE)	F23ILL	47	0.2	SW	3750	881	5	2T 25 R LED	2RTLED	25	0.1	SW	3,750	469	413	0.1	$ 62.84	$ 1,012.50	$0	16.1	16.1
35LED	126A	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
35LED	126B	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
35LED	120K	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
35LED	120J	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	OCC	3,750	570	780	0.2	$ 118.82	$ 945.00	$0	8.0	8.0
55LED	120G	10	2T 17 R F 3 (ELE)	F23ILL	47	0.5	OCC	3750	1,763	10	2T 25 R LED	2RTLED	25	0.3	OCC	3,750	938	825	0.2	$ 125.67	$ 2,025.00	$0	16.1	16.1
35LED	120G	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	120D	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	120N	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	OCC	3750	338	1	T 59 R LED	RTLED38	38	0.0	OCC	3,750	143	195	0.1	$ 29.70	$ 236.25	$0	8.0	8.0
35LED	120E	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	OCC	3750	338	1	T 59 R LED	RTLED38	38	0.0	OCC	3,750	143	195	0.1	$ 29.70	$ 236.25	$0	8.0	8.0
35LED	120C	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
55LED	120A	10	2T 17 R F 3 (ELE)	F23ILL	47	0.5	OCC	3750	1,763	10	2T 25 R LED	2RTLED	25	0.3	OCC	3,750	938	825	0.2	$ 125.67	$ 2,025.00	$0	16.1	16.1
35LED	120A	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	OCC	3750	1,688	5	T 59 R LED	RTLED38	38	0.2	OCC	3,750	713	975	0.3	$ 148.52	$ 1,181.25	$0	8.0	8.0
71	119	4	I 60	I60/1	60	0.2	SW	3750	900	4	CF 26	CFQ26/1-L	27	0.1	SW	3,750	405	495	0.1	$ 75.40	$ 27.00	$0	0.4	0.4
15LED	121	20	S 32 C F 2 (ELE)	F42LL	60	1.2	OCC	3750	4,500	20	4 ft LED Tube	200732x2	30	0.6	OCC	3,750	2,250	2,250	0.6	$ 342.74	$ 4,674.00	$0	13.6	13.6
35LED	121 storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	SW	3,750	428	585	0.2	$ 89.11	$ 708.75	$0	8.0	8.0
35LED	123	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,400	16	T 59 R LED	RTLED38	38	0.6	OCC	3,750	2,280	3,120	0.8	$ 475.26	$ 3,780.00	$0	8.0	8.0
20LED	Boys	9	S 28 P F 1 (ELE)	F41ILL	31	0.3	OCC	3750	1,046	9	4 ft LED Tube	200732x1	15	0.1	OCC	3,750	506	540	0.1	$ 82.26	$ 1,306.80	$0	15.9	15.9
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3,750	315	-	0.0	$ -	$ -	$0		#DIV/0!
20LED	Girls	9	S 28 P F 1 (ELE)	F41ILL	31	0.3	OCC	3750	1,046	9	4 ft LED Tube	200732x1	15	0.1	OCC	3,750	506	540	0.1	$ 82.26	$ 1,306.80	$0	15.9	15.9
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3,750	315	-	0.0	$ -	$ -	$0		#DIV/0!
35LED	127	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	129	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	131	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	133	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
32LED	C-Wing Hallway	36	1T 32 R F 2 (ELE)	F42LL	60	2.2	SW	3750	8,100	36	4 ft LED Tube	200732x2	30	1.1	SW	3,750	4,050	4,050	1.1	$ 616.93	$ 8,413.20	$0	13.6	13.6
35LED	140	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.2	OCC	3750	8,100	24	T 59 R LED	RTLED38	38	0.9	OCC	3,750	3,420	4,680	1.2	$ 712.90	$ 5,670.00	$0	8.0	8.0
35LED	142	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.2	OCC	3750	8,100	24	T 59 R LED	RTLED38	38	0.9	OCC	3,750	3,420	4,680	1.2	$ 712.90	$ 5,670.00	$0	8.0	8.0
35LED	144	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	OCC	3750	2,700	8	T 59 R LED	RTLED38	38	0.3	OCC	3,750	1,140	1,560	0.4	$ 237.63	$ 1,890.00	$0	8.0	8.0
35LED	146	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	148	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
25	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3,750	315	-	0.0	$ -	$ -	$0		#DIV/0!
20LED	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	814	7	4 ft LED Tube	200732x1	15	0.1	OCC	3,750	394	420	0.1	$ 63.98	$ 1,016.40	$0	15.9	15.9
25	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3,750	315	-	0.0	$ -	$ -	$0		#DIV/0!
20LED	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	814	7	4 ft LED Tube	200732x1	15	0.1	OCC	3,750	394	420	0.1	$ 63.98	$ 1,016.40	$0	15.9	15.9
35LED	Janitor	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	3750	675	2	T 59 R LED	RTLED38	38	0.1	SW	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	154	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	141	9	T 32 R F 3 (ELE)	F43ILL/2	90	0

Energy Audit of Burlington City High School
CHA Project No.28886
ECM-L1 Lighting Replacements

		EXISTING CONDITIONS							RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
Field Code	Area Description Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of Fixtures No. of fixtures before the retrofit	Standard Fixture Code "Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Fixture Code Code from Table of Standard Fixture Wattages	Watts per Fixture Value from Table of Standard Fixture Wattages	kW/Space (Watts/Fixt) * (Fixt No.)	Exist Control Pre-inst. control device	Annual Hours Estimated daily hours for the usage group	Annual kWh (kW/space) * (Annual Hours)	Number of Fixtures No. of fixtures after the retrofit	Standard Fixture Code "Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Fixture Code Code from Table of Standard Fixture Wattages	Watts per Fixture Value from Table of Standard Fixture Wattages	kW/Space (Watts/Fixt) * (Number of Fixtures)	Retrofit control Retrofit control device	Annual Hours Estimated annual hours for the usage group	Annual kWh (kW/space) * (Annual Hours)	Annual kWh Saved (Original Annual kWh) - (Retrofit Annual kWh)	Annual kW Saved (Original Annual kW) - (Retrofit Annual kW)	Annual $ Saved (kWh Saved) * ($/kWh)	Retrofit Cost Cost for renovations to lighting system	NJ Smart Start Lighting Incentive Prescriptive Lighting Measures	Simple Payback With Out Incentive Length of time for renovations cost to be recovered	Simple Payback Length of time for renovations cost to be recovered
15LED	Locker Room	9	S 32 C F 2 (ELE)	F42LL	60	0.5	SW	3750	2,025	9	4 ft LED Tube	200732x2	30	0.3	SW	3,750	1,013	1,013	0.3	$ 154.23	$ 2,103.30	$0	13.6	13.6
71	Locker Room	10	I 60	I60/1	60	0.6	SW	3750	2,250	10	CF 26	CFQ26/1-L	27	0.3	SW	3,750	1,013	1,238	0.3	$ 188.51	$ 67.50	$0	0.4	0.4
71	Shower	8	I 60	I60/1	60	0.5	SW	3750	1,800	8	CF 26	CFQ26/1-L	27	0.2	SW	3,750	810	990	0.3	$ 150.80	$ 54.00	$0	0.4	0.4
71	Hallway	3	I 60	I60/1	60	0.2	SW	3750	675	3	CF 26	CFQ26/1-L	27	0.1	SW	3,750	304	371	0.1	$ 56.55	$ 20.25	$0	0.4	0.4
71	Teacher Locker	2	I 60	I60/1	60	0.1	SW	3750	450	2	CF 26	CFQ26/1-L	27	0.1	SW	3,750	203	248	0.1	$ 37.70	$ 13.50	$0	0.4	0.4
32LED	Coach Office	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	OCC	3750	900	4	4 ft LED Tube	200732x2	30	0.1	OCC	3,750	450	450	0.1	$ 68.55	$ 934.80	$0	13.6	13.6
71	Team Locker	6	I 60	I60/1	60	0.4	SW	3750	1,350	6	CF 26	CFQ26/1-L	27	0.2	SW	3,750	608	743	0.2	$ 113.10	$ 40.50	$0	0.4	0.4
32LED	Director Office	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	OCC	3750	450	2	4 ft LED Tube	200732x2	30	0.1	OCC	3,750	225	225	0.1	$ 34.27	$ 467.40	$0	13.6	13.6
32LED	Entrance	6	1T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3750	1,350	6	4 ft LED Tube	200732x2	30	0.2	SW	3,750	675	675	0.2	$ 102.82	$ 1,402.20	$0	13.6	13.6
15LED	Girl Locker Room	9	S 32 C F 2 (ELE)	F42LL	60	0.5	SW	3750	2,025	9	4 ft LED Tube	200732x2	30	0.3	SW	3,750	1,013	1,013	0.3	$ 154.23	$ 2,103.30	$0	13.6	13.6
71	Girl Locker Room	10	I 60	I60/1	60	0.6	SW	3750	2,250	10	CF 26	CFQ26/1-L	27	0.3	SW	3,750	1,013	1,238	0.3	$ 188.51	$ 67.50	$0	0.4	0.4
71	Shower	8	I 60	I60/1	60	0.5	SW	3750	1,800	8	CF 26	CFQ26/1-L	27	0.2	SW	3,750	810	990	0.3	$ 150.80	$ 54.00	$0	0.4	0.4
71	Hallway	3	I 60	I60/1	60	0.2	SW	3750	675	3	CF 26	CFQ26/1-L	27	0.1	SW	3,750	304	371	0.1	$ 56.55	$ 20.25	$0	0.4	0.4
146LED	Morris Gym	40	High Bay MH 400	MH400/1	458	18.3	SW	3750	68,700	40	BAYLED78W	BAYLED78W	93	3.7	SW	3,750	13,950	54,750	14.6	$ 8,339.96	$ 33,767.82	$0	4.0	4.0
265LED	Morris Gym	4	Gym H8 8L CFL	CF42/8-L	376	1.5	SW	3750	5,640	4	BAYLED78W	BAYLED78W	93	0.4	SW	3,750	1,395	4,245	1.1	$ 646.63	$ 3,376.78	$0	5.2	5.2
32LED	E-Wing Hallway	22	1T 32 R F 2 (ELE)	F42LL	60	1.3	SW	3750	4,950	22	4 ft LED Tube	200732x2	30	0.7	SW	3,750	2,475	2,475	0.7	$ 377.01	$ 5,141.40	$0	13.6	13.6
32LED	169	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	3750	900	4	4 ft LED Tube	200732x2	30	0.1	SW	3,750	450	450	0.1	$ 68.55	$ 934.80	$0	13.6	13.6
71	171	10	I 60	I60/1	60	0.6	SW	3750	2,250	10	CF 26	CFQ26/1-L	27	0.3	SW	3,750	1,013	1,238	0.3	$ 188.51	$ 67.50	$0	0.4	0.4
32LED	175	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	3750	900	4	4 ft LED Tube	200732x2	30	0.1	SW	3,750	450	450	0.1	$ 68.55	$ 934.80	$0	13.6	13.6
32LED	172	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	3750	450	2	4 ft LED Tube	200732x2	30	0.1	SW	3,750	225	225	0.1	$ 34.27	$ 467.40	$0	13.6	13.6
71	172	12	I 60	I60/1	60	0.7	SW	3750	2,700	12	CF 26	CFQ26/1-L	27	0.3	SW	3,750	1,215	1,485	0.4	$ 226.21	$ 81.00	$0	0.4	0.4
32LED	Café	56	1T 32 R F 2 (ELE)	F42LL	60	3.4	SW	3750	12,600	56	4 ft LED Tube	200732x2	30	1.7	SW	3,750	6,300	6,300	1.7	$ 959.67	$ 13,087.20	$0	13.6	13.6
55LED	Café	8	2T 17 R F 3 (ELE)	F23ILL	47	0.4	SW	3750	1,410	8	2T 25 R LED	2RTLED	25	0.2	SW	3,750	750	660	0.2	$ 100.54	$ 1,620.00	$0	16.1	16.1
32LED	Café	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	SW	3750	1,800	8	4 ft LED Tube	200732x2	30	0.2	SW	3,750	900	900	0.2	$ 137.10	$ 1,869.60	$0	13.6	13.6
55LED	Kitchen	16	2T 17 R F 3 (ELE)	F23ILL	47	0.8	SW	3750	2,820	16	2T 25 R LED	2RTLED	25	0.4	SW	3,750	1,500	1,320	0.4	$ 201.07	$ 3,240.00	$0	16.1	16.1
32LED	Kitchen	5	1T 32 R F 2 (ELE)	F42LL	60	0.3	SW	3750	1,125	5	4 ft LED Tube	200732x2	30	0.2	SW	3,750	563	563	0.2	$ 85.68	$ 1,168.50	$0	13.6	13.6
32LED	Dishwasher	6	1T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3750	1,350	6	4 ft LED Tube	200732x2	30	0.2	SW	3,750	675	675	0.2	$ 102.82	$ 1,402.20	$0	13.6	13.6
32LED	Office	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	OCC	3750	1,800	8	4 ft LED Tube	200732x2	30	0.2	OCC	3,750	900	900	0.2	$ 137.10	$ 1,869.60	$0	13.6	13.6
32LED	F-Wing Hallway	20	1T 32 R F 2 (ELE)	F42LL	60	1.2	SW	3750	4,500	20	4 ft LED Tube	200732x2	30	0.6	SW	3,750	2,250	2,250	0.6	$ 342.74	$ 4,674.00	$0	13.6	13.6
55LED	F-Wing Hallway	24	2T 17 R F 3 (ELE)	F23ILL	47	1.1	SW	3750	4,230	24	2T 25 R LED	2RTLED	25	0.6	SW	3,750	2,250	1,980	0.5	$ 301.61	$ 4,860.00	$0	16.1	16.1
35LED	184	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
35LED	186	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.6	OCC	3750	6,075	18	T 59 R LED	RTLED38	38	0.7	OCC	3,750	2,565	3,510	0.9	$ 534.67	$ 4,252.50	$0	8.0	8.0
35LED	188	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.2	OCC	3750	4,388	13	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,853	2,535	0.7	$ 386.15	$ 3,071.25	$0	8.0	8.0
35LED	190	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,063	15	T 59 R LED	RTLED38	38	0.6	OCC	3,750	2,138	2,925	0.8	$ 445.56	$ 3,543.75	$0	8.0	8.0
35LED	192	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$0	8.0	8.0
71	165	5	I 60	I60/1	60	0.3	SW	3750	1,125	5	CF 26	CFQ26/1-L	27	0.1	SW	3,750	506	619	0.2	$ 94.25	$ 33.75	$0	0.4	0.4
15LED	8	8	S 32 C F 2 (ELE)	F42LL	60	0.5	SW	3750	1,800	8	4 ft LED Tube	200732x2	30	0.2	SW	3,750	900	900	0.2	$ 137.10	$ 1,869.60	$0	13.6	13.6
32LED	181	10	1T 32 R F 2 (ELE)	F42LL	60	0.6	OCC	3750	2,250	10	4 ft LED Tube	200732x2	30	0.3	OCC	3,750	1,125	1,125	0.3	$ 171.37	$ 2,337.00	$0	13.6	13.6
35LED	181	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	181	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	OCC	3,750	285	390	0.1	$ 59.41	$ 472.50	$0	8.0	8.0
35LED	189	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	OCC	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$0	8.0	8.0
35LED	189	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	OCC	3750	2,363	7	T 59 R LED	RTLED38	38	0.3	OCC	3,750	998	1,365	0.4	$ 207.93	$ 1,653.75	$0	8.0	8.0
35LED	193	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.3	OCC	3750	8,775	26	T 59 R LED	RTLED38	38	1.0	OCC	3,750	3,705	5,070	1.4	$ 772.30	$ 6,142.50	$0	8.0	8.0
35LED	196	40	T 32 R F 3 (ELE)	F43ILL/2	90	3.6	OCC	3750	13,500	40	T 59 R LED	RTLED38	38	1.5	OCC	3,750	5,700	7,800	2.1	$ 1,188.16	$ 9,450.00	$0	8.0	8.0
215LED	Auditorium	30	High Bay MH 250	MHPS/SCWA/250/1	288	8.6	SW	3750	32,400	30	BAYLED78W	BAYLED78W	93	2.8	SW	3,750	10,463	21,938	5.9	$ 3,341.70	$ 25,325.87	$0	7.6	7.6
25	Auditorium	18	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.5	SW	3750	1,890	18	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.5	SW	3,750	1,890	-	0.0	$ -	$ -	$0		#DIV/0!
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	OCC	3750	450	2	4 ft LED Tube	200732x2	30	0.1	OCC	3,750	225	225	0.1	$ 34.27	$ 467.40	$0	13.6	13.6

Energy Audit of Burlington City High School
CHA Project No.28886
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
35LED	A100A	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Main Entrance	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Main Entrance	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	3750	1,687.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Main Entrance	2	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	210.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	104	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	3750	3,037.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	104	7	2T 17 R F 3 (ELE)	F23ILL	47	0.3	0.3	NONE	3750	1,233.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	104A	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	104H	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	3750	337.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	104C	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	104G	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	104F	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	104D	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Hallway	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Media Center Entrance	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	0.2	NONE	3750	630.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	Media Center	30	2T 17 R F 3 (ELE)	F23ILL	47	1.4	1.4	NONE	3750	5,287.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Media Center	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	0.6	NONE	3750	2,100.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Media Center	58	S 32 C F 2 (ELE)	F42LL	60	3.5	3.5	NONE	3750	13,050.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	106A	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	106B	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	106E	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	NONE	3750	1,012.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	106F	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	3750	2,025.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	106H	15	S 32 C F 2 (ELE)	F42LL	60	0.9	0.9	NONE	3750	3,375.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	106D	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	NONE	3750	1,012.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Conference Room	12	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.3	0.3	NONE	3750	1,260.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Conference Room	3	S 32 C F 2 (ELE)	F42LL	60	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	108	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	110	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Boys	5	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	3750	581.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Girls	5	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	3750	581.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	112	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	3750	4,050.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	116	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	3750	4,050.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Hallway	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.6	1.6	NONE	3750	6,075.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Hallway	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	0.6	NONE	3750	2,100.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	105	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	3750	4,050.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	105 Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3375	911.3	101.3	0.0	$14.28	$270.00	$35.00	18.9	16.5
35LED	107	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	3750	5,062.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	109	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	3750	5,062.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	111	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	3750	4,050.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	111 Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3375	911.3	101.3	0.0	$14.28	$270.00	$35.00	18.9	16.5
35LED	B-Wing Hallway	38	T 32 R F 3 (ELE)	F43ILL/2	90	3.4	3.4	NONE	3750	12,825.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	133	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	3750	3,037.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	132B	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	132B	2	2T 17 R F 3 (ELE)	F23ILL	47	0.1	0.1	NONE	3750	352.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	130C	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	130B	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	130B	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	705.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Restroom	1	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.0	0.0	NONE	3750	105.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	0.1	NONE	3750	232.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	130D	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126P	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	126F	2	2T 17 R F 3 (ELE)	F23ILL	47	0.1	0.1	NONE	3750	352.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126F	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126M	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126K	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126J	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126L	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Men's	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	0.1	NONE	3750	232.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	126E	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	0.2	NONE	3750	630.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	126E	3	S 32 C F 2 (ELE)	F42LL	60	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126C	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126 Hallway	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	126 Hallway	5	2T 17 R F 3 (ELE)	F23ILL	47	0.2	0.2	NONE	3750	881.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126A	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	126B	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120K	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120J	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	120G	10	2T 17 R F 3 (ELE)	F23ILL	47	0.5	0.5	NONE	3750	1,762.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120G	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120D	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120N	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	3750	337.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120E	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	3750	337.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120C	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	120A	10	2T 17 R F 3 (ELE)	F23ILL	47	0.5	0.5	NONE	3750	1,762.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	120A	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	3750	1,687.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
71	119	4	I 60	I60/1	60	0.2	0.2	C-OCC	3375	810.0	90.0	0.0	$12.69	$270.00	$35.00	21.3	18.5
15LED	121	20	S 32 C F 2 (ELE)	F42LL	60	1.2	1.2	NONE	3750	4,500.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	121 storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3375	911.3	101.3	0.0	$14.28	$270.00	$35.00	18.9	16.5
35LED	123	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	3750	5,400.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Boys	9	S 28 P F 1 (ELE)	F41ILL	31	0.3	0.3	NONE	3750	1,046.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Girls	9	S 28 P F 1 (ELE)	F41ILL	31	0.3	0.3	NONE	3750	1,046.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	127	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!

Energy Audit of Burlington City High School
CHA Project No.28886
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
35LED	129	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	131	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	133	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	C-Wing Hallway	36	1T 32 R F 2 (ELE)	F42LL	60	2.2	2.2	NONE	3750	8,100.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	140	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.2	2.2	NONE	3750	8,100.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	142	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.2	2.2	NONE	3750	8,100.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	144	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	146	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	148	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	3750	813.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	3750	813.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Janitor	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3375	607.5	67.5	0.0	$9.52	$270.00	$35.00	28.4	24.7
35LED	154	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	141	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	3750	3,037.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	143	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	145	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	147	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	149	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	151	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	3750	2,025.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	153	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	3750	2,025.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	155	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	D-Wing Hallway	36	1T 32 R F 2 (ELE)	F42LL	60	2.2	2.2	NONE	3750	8,100.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	156	53	1T 32 R F 2 (ELE)	F42LL	60	3.2	3.2	NONE	3750	11,925.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
71	156 S	2	I 60	I60/1	60	0.1	0.1	C-OCC	3375	405.0	45.0	0.0	$6.35	$270.00	$35.00	42.6	37.0
71	156 S	1	I 60	I60/1	60	0.1	0.1	C-OCC	3375	202.5	22.5	0.0	$3.17	$270.00	$35.00	85.1	74.1
71	156 S	2	I 60	I60/1	60	0.1	0.1	C-OCC	3375	405.0	45.0	0.0	$6.35	$270.00	$35.00	42.6	37.0
32LED	158	53	1T 32 R F 2 (ELE)	F42LL	60	3.2	3.2	NONE	3750	11,925.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	158 S	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3375	607.5	67.5	0.0	$9.52	$270.00	$35.00	28.4	24.7
35LED	158 S	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3375	607.5	67.5	0.0	$9.52	$270.00	$35.00	28.4	24.7
32LED	160	54	1T 32 R F 2 (ELE)	F42LL	60	3.2	3.2	NONE	3750	12,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
71	160 S	1	I 60	I60/1	60	0.1	0.1	C-OCC	3375	202.5	22.5	0.0	$3.17	$270.00	$35.00	85.1	74.1
71	160 S	1	I 60	I60/1	60	0.1	0.1	C-OCC	3375	202.5	22.5	0.0	$3.17	$270.00	$35.00	85.1	74.1
71	160 S	2	I 60	I60/1	60	0.1	0.1	C-OCC	3375	405.0	45.0	0.0	$6.35	$270.00	$35.00	42.6	37.0
146LED	Burr Gym	38	High Bay MH 400	MH400/1	458	17.4	17.4	C-OCC	3375	58,738.5	6,526.5	0.0	$920.24	$270.00	$35.00	0.3	0.3
265LED	Burr Gym	20	Gym HB 8L CFL	CF42/8-L	376	7.5	7.5	C-OCC	3375	25,380.0	2,820.0	0.0	$397.62	$270.00	$35.00	0.7	0.6
15LED	Locker Room	9	S 32 C F 2 (ELE)	F42LL	60	0.5	0.5	C-OCC	3375	1,822.5	202.5	0.0	$28.55	$270.00	$35.00	9.5	8.2
71	Locker Room	10	I 60	I60/1	60	0.6	0.6	C-OCC	3375	2,025.0	225.0	0.0	$31.73	$270.00	$35.00	8.5	7.4
71	Shower	8	I 60	I60/1	60	0.5	0.5	C-OCC	3375	1,620.0	180.0	0.0	$25.38	$270.00	$35.00	10.6	9.3
71	Hallway	3	I 60	I60/1	60	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
71	Teacher Locker	2	I 60	I60/1	60	0.1	0.1	C-OCC	3375	405.0	45.0	0.0	$6.35	$270.00	$35.00	42.6	37.0
32LED	Coach Office	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	NONE	3750	900.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
71	Team Locker	6	I 60	I60/1	60	0.4	0.4	C-OCC	3375	1,215.0	135.0	0.0	$19.04	$270.00	$35.00	14.2	12.3
32LED	Director Office	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Entrance	6	1T 32 R F 2 (ELE)	F42LL	60	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Girl Locker Room	9	S 32 C F 2 (ELE)	F42LL	60	0.5	0.5	C-OCC	3375	1,822.5	202.5	0.0	$28.55	$270.00	$35.00	9.5	8.2
71	Girl Locker Room	10	I 60	I60/1	60	0.6	0.6	C-OCC	3375	2,025.0	225.0	0.0	$31.73	$270.00	$35.00	8.5	7.4
71	Shower	8	I 60	I60/1	60	0.5	0.5	C-OCC	3375	1,620.0	180.0	0.0	$25.38	$270.00	$35.00	10.6	9.3
71	Hallway	3	I 60	I60/1	60	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
146LED	Morris Gym	40	High Bay MH 400	MH400/1	458	18.3	18.3	C-OCC	3375	61,830.0	6,870.0	0.0	$968.67	$270.00	$35.00	0.3	0.2
265LED	Morris Gym	4	Gym HB 8L CFL	CF42/8-L	376	1.5	1.5	C-OCC	3375	5,076.0	564.0	0.0	$79.52	$270.00	$35.00	3.4	3.0
32LED	E-Wing Hallway	22	1T 32 R F 2 (ELE)	F42LL	60	1.3	1.3	NONE	3750	4,950.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	169	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	C-OCC	3375	810.0	90.0	0.0	$12.69	$270.00	$35.00	21.3	18.5
71	171	10	I 60	I60/1	60	0.6	0.6	NONE	3750	2,250.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	175	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	C-OCC	3375	810.0	90.0	0.0	$12.69	$270.00	$35.00	21.3	18.5
32LED	172	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	C-OCC	3375	405.0	45.0	0.0	$6.35	$270.00	$35.00	42.6	37.0
71	172	12	I 60	I60/1	60	0.7	0.7	C-OCC	3375	2,430.0	270.0	0.0	$38.07	$270.00	$35.00	7.1	6.2
32LED	Café	56	1T 32 R F 2 (ELE)	F42LL	60	3.4	3.4	C-OCC	3375	11,340.0	1,260.0	0.0	$177.66	$270.00	$35.00	1.5	1.3
55LED	Café	8	2T 17 R F 3 (ELE)	F23ILL	47	0.4	0.4	C-OCC	3375	1,269.0	141.0	0.0	$19.88	$270.00	$35.00	13.6	11.8
32LED	Café	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	0.5	C-OCC	3375	1,620.0	180.0	0.0	$25.38	$270.00	$35.00	10.6	9.3
55LED	Kitchen	16	2T 17 R F 3 (ELE)	F23ILL	47	0.8	0.8	NONE	3750	2,820.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Kitchen	5	1T 32 R F 2 (ELE)	F42LL	60	0.3	0.3	NONE	3750	1,125.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Dishwasher	6	1T 32 R F 2 (ELE)	F42LL	60	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Office	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	0.5	NONE	3750	1,800.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	F-Wing Hallway	20	1T 32 R F 2 (ELE)	F42LL	60	1.2	1.2	NONE	3750	4,500.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
55LED	F-Wing Hallway	24	2T 17 R F 3 (ELE)	F23ILL	47	1.1	1.1	NONE	3750	4,230.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	184	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	186	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.6	1.6	NONE	3750	6,075.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	188	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.2	1.2	NONE	3750	4,387.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	190	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	3750	5,062.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	192	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	3750	4,725.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
71	165	5	I 60	I60/1	60	0.3	0.3	NONE	3750	1,125.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	165	8	S 32 C F 2 (ELE)	F42LL	60	0.5	0.5	NONE	3750	1,800.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	181	10	1T 32 R F 2 (ELE)	F42LL	60	0.6	0.6	NONE	3750	2,250.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	181	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	181	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	NONE	3750	675.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	189	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	3750	4,050.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	189	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	3750	2,362.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	193	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.3	2.3	NONE	3750	8,775.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	196	40	T 32 R F 3 (ELE)	F43ILL/2	90	3.6	3.6	NONE	3750	13,500.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
215LED	Auditorium	30	High Bay MH 250	MHPS/SCWA/250/1	288	8.6	8.6	C-OCC	3375	29,160.0	3,240.0	0.0	$456.84	$270.00	$35.00	0.6	0.5
25	Auditorium	18	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.5	0.5	C-OCC	3375	1,701.0	189.0	0.0	$26.65	$270.00	$35.00	10.1	8.8
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!

Energy Audit of Burlington City High School
CHA Project No.28886
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Annex Classroom	6	S 32 C F 2 (ELE)	F42LL	60	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Hallway	10	T 32 R F 3 (ELE)	F43ILL/2	90	0.9	0.9	NONE	3750	3,375.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Restroom	1	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	225.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	202	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	204	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	206	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	208	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	210	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Boys	10	S 28 P F 1 (ELE)	F41ILL	31	0.3	0.3	NONE	3750	1,162.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Girls	10	S 28 P F 1 (ELE)	F41ILL	31	0.3	0.3	NONE	3750	1,162.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	201	10	S 32 C F 2 (ELE)	F42LL	60	0.6	0.6	NONE	3750	2,250.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	203	15	S 32 C F 2 (ELE)	F42LL	60	0.9	0.9	NONE	3750	3,375.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	205	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	207	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	209	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	211	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	214	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Hallway	32	1T 32 R F 2 (ELE)	F42LL	60	1.9	1.9	NONE	3750	7,200.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	Boiler Room	13	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	2,925.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	240	6	S 32 C F 2 (ELE)	F42LL	60	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	242	15	S 32 C F 2 (ELE)	F42LL	60	0.9	0.9	NONE	3750	3,375.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	242	8	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	0.2	NONE	3750	840.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	244	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	NONE	3750	5,400.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	246	2	S 32 C F 2 (ELE)	F42LL	60	0.1	0.1	NONE	3750	450.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	248	27	S 32 C F 2 (ELE)	F42LL	60	1.6	1.6	NONE	3750	6,075.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Boys	4	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	420.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Boys	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	0.1	NONE	3750	232.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Girls	4	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	420.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Girls	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	0.1	NONE	3750	232.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	252	12	S 32 C F 2 (ELE)	F42LL	60	0.7	0.7	NONE	3750	2,700.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	252	5	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	525.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	243	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	OCC	3375	4,860.0	540.0	0.0	$76.14	$128.25	$20.00	1.7	1.4
15LED	245	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	OCC	3375	4,860.0	540.0	0.0	$76.14	$128.25	$20.00	1.7	1.4
15LED	247	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	OCC	3375	4,860.0	540.0	0.0	$76.14	$128.25	$20.00	1.7	1.4
15LED	249	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	OCC	3375	4,860.0	540.0	0.0	$76.14	$128.25	$20.00	1.7	1.4
15LED	251	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	OCC	3375	4,860.0	540.0	0.0	$76.14	$128.25	$20.00	1.7	1.4
15LED	253	24	S 32 C F 2 (ELE)	F42LL	60	1.4	1.4	OCC	3375	4,860.0	540.0	0.0	$76.14	$128.25	$20.00	1.7	1.4
32LED	Hallway	32	1T 32 R F 2 (ELE)	F42LL	60	1.9	1.9	NONE	3750	7,200.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	221	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	223	10	S 32 C F 2 (ELE)	F42LL	60	0.6	0.6	NONE	3750	2,250.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	225	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Boys	8	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	3750	930.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Girls	8	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	3750	930.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	315.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	229	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	231	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	233	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	235	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	222	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	224	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	226	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	228	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	230	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	232	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	234	14	S 32 C F 2 (ELE)	F42LL	60	0.8	0.8	NONE	3750	3,150.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Hallway	38	1T 32 R F 2 (ELE)	F42LL	60	2.3	2.3	NONE	3750	8,550.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
25	236	5	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	0.1	NONE	3750	525.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
15LED	236	6	S 32 C F 2 (ELE)	F42LL	60	0.4	0.4	NONE	3750	1,350.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
								0	#N/A	#VALUE!	#VALUE!	#N/A	#VALUE!			#VALUE!	#VALUE!
								0	#N/A	#VALUE!	#VALUE!	#N/A	#VALUE!			#VALUE!	#VALUE!
								0	#N/A	#VALUE!	#VALUE!	#N/A	#VALUE!			#VALUE!	#VALUE!
								0	#N/A	#VALUE!	#VALUE!	#N/A	#VALUE!			#VALUE!	#VALUE!
	Total	**2,530**				**210.0**	**210.0**			**759615.8**	**27719.3**	**0.0**	**3908.4**	**9949.5**	**1310.0**		
										Demand Savings			**0.0**	**$0**			

Energy Audit of Burlington City High School

CHA Project No.28886

ECM-L3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS							RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
35LED	A100A	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	Main Entrance	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	Main Entrance	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	3750	1,688	5	T 59 R LED	RTLED38	38	0.2	NONE	3,750	713	975	0.3	$ 148.52	$ 1,181.25	$ -	8.0	8.0
25	Main Entrance	2	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	SW	3750	210	2	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	210	-	0.0	$ -	$ -	$ -		
35LED	104	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	OCC	3750	3,038	9	T 59 R LED	RTLED38	38	0.3	NONE	3,750	1,283	1,755	0.5	$ 267.34	$ 2,126.25	$ -	8.0	8.0
55LED	104	7	2T 17 R F 3 (ELE)	F23ILL	47	0.3	OCC	3750	1,234	7	2T 25 R LED	2RTLED	25	0.2	NONE	3,750	656	578	0.2	$ 87.97	$ 1,417.50	$ -	16.1	16.1
55LED	104A	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
35LED	104H	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	OCC	3750	338	1	T 59 R LED	RTLED38	38	0.0	NONE	3,750	143	195	0.1	$ 29.70	$ 236.25	$ -	8.0	8.0
55LED	104C	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
55LED	104G	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
55LED	104F	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
55LED	104D	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
32LED	Hallway	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	3750	450	2	4 ft LED Tube	200732x2	30	0.1	NONE	3,750	225	225	0.1	$ 34.27	$ 467.40	$ -	13.6	13.6
25	Media Center Entrance	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	SW	3750	630	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	NONE	3,750	630	-	0.0	$ -	$ -	$ -		
55LED	Media Center	30	2T 17 R F 3 (ELE)	F23ILL	47	1.4	SW	3750	5,288	30	2T 25 R LED	2RTLED	25	0.8	NONE	3,750	2,813	2,475	0.7	$ 377.01	$ 6,075.00	$ -	16.1	16.1
25	Media Center	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	SW	3750	2,100	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	NONE	3,750	2,100	-	0.0	$ -	$ -	$ -		
15LED	Media Center	58	S 32 C F 2 (ELE)	F42LL	60	3.5	SW	3750	13,050	58	4 ft LED Tube	200732x2	30	1.7	NONE	3,750	6,525	6,525	1.7	$ 993.94	$ 13,554.60	$ -	13.6	13.6
35LED	106A	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	106B	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	106E	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	OCC	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	NONE	3,750	428	585	0.2	$ 89.11	$ 708.75	$ -	8.0	8.0
35LED	106F	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	OCC	3750	2,025	6	T 59 R LED	RTLED38	38	0.2	NONE	3,750	855	1,170	0.3	$ 178.22	$ 1,417.50	$ -	8.0	8.0
15LED	106H	15	S 32 C F 2 (ELE)	F42LL	60	0.9	OCC	3750	3,375	15	4 ft LED Tube	200732x2	30	0.5	NONE	3,750	1,688	1,688	0.5	$ 257.05	$ 3,505.50	$ -	13.6	13.6
35LED	106D	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	OCC	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	NONE	3,750	428	585	0.2	$ 89.11	$ 708.75	$ -	8.0	8.0
25	Conference Room	12	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.3	SW	3750	1,260	12	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.3	NONE	3,750	1,260	-	0.0	$ -	$ -	$ -		
15LED	Conference Room	3	S 32 C F 2 (ELE)	F42LL	60	0.2	SW	3750	675	3	4 ft LED Tube	200732x2	30	0.1	NONE	3,750	338	338	0.1	$ 51.41	$ 701.10	$ -	13.6	13.6
35LED	108	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	110	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
20LED	Boys	5	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	581	5	4 ft LED Tube	200732x1	15	0.1	NONE	3,750	281	300	0.1	$ 45.70	$ 726.00	$ -	15.9	15.9
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	315	-	0.0	$ -	$ -	$ -		
20LED	Girls	5	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	581	5	4 ft LED Tube	200732x1	15	0.1	NONE	3,750	281	300	0.1	$ 45.70	$ 726.00	$ -	15.9	15.9
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	315	-	0.0	$ -	$ -	$ -		
35LED	112	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$ -	8.0	8.0
35LED	116	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$ -	8.0	8.0
35LED	Hallway	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.6	SW	3750	6,075	18	T 59 R LED	RTLED38	38	0.7	NONE	3,750	2,565	3,510	0.9	$ 534.67	$ 4,252.50	$ -	8.0	8.0
25	Hallway	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	SW	3750	2,100	20	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.6	NONE	3,750	2,100	-	0.0	$ -	$ -	$ -		
35LED	105	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$ -	8.0	8.0
35LED	105 Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	C-OCC	4,375	385	628	0.2	$ 95.14	$ 978.75	$ 35	10.3	9.9
35LED	107	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,063	15	T 59 R LED	RTLED38	38	0.6	NONE	3,750	2,138	2,925	0.8	$ 445.56	$ 3,543.75	$ -	8.0	8.0
35LED	109	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,063	15	T 59 R LED	RTLED38	38	0.6	NONE	3,750	2,138	2,925	0.8	$ 445.56	$ 3,543.75	$ -	8.0	8.0
35LED	111	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$ -	8.0	8.0
35LED	111 Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	C-OCC	4,375	385	628	0.2	$ 95.14	$ 978.75	$ 35	10.3	9.9
35LED	B-Wing Hallway	38	T 32 R F 3 (ELE)	F43ILL/2	90	3.4	SW	3750	12,825	38	T 59 R LED	RTLED38	38	1.4	NONE	3,750	5,415	7,410	2.0	$ 1,128.75	$ 8,977.50	$ -	8.0	8.0
35LED	133	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	OCC	3750	3,038	9	T 59 R LED	RTLED38	38	0.3	NONE	3,750	1,283	1,755	0.5	$ 267.34	$ 2,126.25	$ -	8.0	8.0
35LED	132B	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
55LED	132B	2	2T 17 R F 3 (ELE)	F23ILL	47	0.1	OCC	3750	353	2	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	188	165	0.0	$ 25.13	$ 405.00	$ -	16.1	16.1
55LED	130C	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
35LED	130B	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
55LED	130B	4	2T 17 R F 3 (ELE)	F23ILL	47	0.2	OCC	3750	705	4	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	375	330	0.1	$ 50.27	$ 810.00	$ -	16.1	16.1
25	Restroom	1	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.0	OCC	3750	105	1	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.0	NONE	3,750	105	-	0.0	$ -	$ -	$ -		
20LED	Restroom	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	OCC	3750	233	2	4 ft LED Tube	200732x1	15	0.0	NONE	3,750	113	120	0.0	$ 18.28	$ 290.40	$ -	15.9	15.9
35LED	130D	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	126P	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
55LED	126F	2	2T 17 R F 3 (ELE)	F23ILL	47	0.1	OCC	3750	353	2	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	188	165	0.0	$ 25.13	$ 405.00	$ -	16.1	16.1
35LED	126F	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
35LED	126M	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	126K	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	126J	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	126L	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
20LED	Men's	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	OCC	3750	233	2	4 ft LED Tube	200732x1	15	0.0	NONE	3,750	113	120	0.0	$ 18.28	$ 290.40	$ -	15.9	15.9
25	126E	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	SW	3750	630	6	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.2	NONE	3,750	630	-	0.0	$ -	$ -	$ -		
15LED	126E	3	S 32 C F 2 (ELE)	F42LL	60	0.2	SW	3750	675	3	4 ft LED Tube	200732x2	30	0.1	NONE	3,750	338	338	0.1	$ 51.41	$ 701.10	$ -	13.6	13.6
35LED	126C	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
35LED	126 Hallway	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	3750	2,700	8	T 59 R LED	RTLED38	38	0.3	NONE	3,750	1,140	1,560	0.4	$ 237.63	$ 1,890.00	$ -	8.0	8.0
55LED	126 Hallway	5	2T 17 R F 3 (ELE)	F23ILL	47	0.2	SW	3750	881	5	2T 25 R LED	2RTLED	25	0.1	NONE	3,750	469	413	0.1	$ 62.84	$ 1,012.50	$ -	16.1	16.1
35LED	126A	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
35LED	126B	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
35LED	120K	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
35LED	120J	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	3750	1,350	4	T 59 R LED	RTLED38	38	0.2	NONE	3,750	570	780	0.2	$ 118.82	$ 945.00	$ -	8.0	8.0
55LED	120G	10	2T 17 R F 3 (ELE)	F23ILL	47	0.5	OCC	3750	1,763	10	2T 25 R LED	2RTLED	25	0.3	NONE	3,750	938	825	0.2	$ 125.67	$ 2,025.00	$ -	16.1	16.1
35LED	120G	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	120D	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	120N	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	OCC	3750	338	1	T 59 R LED	RTLED38	38	0.0	NONE	3,750	143	195	0.1	$ 29.70	$ 236.25	$ -	8.0	8.0
35LED	120E	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	OCC	3750	338	1	T 59 R LED	RTLED38	38	0.0	NONE	3,750	143	195	0.1	$ 29.70	$ 236.25	$ -	8.0	8.0
35LED	120C	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
55LED	120A	10	2T 17 R F 3 (ELE)	F23ILL	47	0.5	OCC	3750	1,763	10	2T 25 R LED	2RTLED	25	0.3	NONE	3,750	938	825	0.2	$ 125.67	$ 2,025.00	$ -	16.1	16.1
35LED	120A	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	OCC	3750	1,688	5	T 59 R LED	RTLED38	38	0.2	NONE	3,750	713	975	0.3	$ 148.52	$ 1,181.25	$ -	8.0	8.0
71	119	4	I 60	I60/1	60	0.2	SW	3750	900	4	CF 26	CFQ26/1-L	27	0.1	C-OCC	3,375	365	536	0.1	$ 81.11	$ 297.00	$ 35	3.7	3.2
15LED	121	20	S 32 C F 2 (ELE)	F42LL	60	1.2	OCC	3750	4,500	20	4 ft LED Tube	200732x2	30	0.6	NONE	3,750	2,250	2,250	0.6	$ 342.74	$ 4,674.00	$ -	13.6	13.6
35LED	121 storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	3750	1,013	3	T 59 R LED	RTLED38	38	0.1	C-OCC	3,375	385	628	0.2	$ 95.14	$ 978.75	$ 35	10.3	9.9
35LED	123	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,400	16	T 59 R LED	RTLED38	38	0.6	NONE	3,750	2,280	3,120	0.8	$ 475.26	$ 3,780.00	$ -	8.0	8.0
20LED	Boys	9	S 28 P F 1 (ELE)	F41ILL	31	0.3	OCC	3750	1,046	9	4 ft LED Tube	200732x1	15	0.1	NONE	3,750	506	540	0.1	$ 82.26	$ 1,306.80	$ -	15.9	15.9
25	Boys	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	315	-	0.0	$ -	$ -	$ -		
20LED	Girls	9	S 28 P F 1 (ELE)	F41ILL	31	0.3	OCC	3750	1,046	9	4 ft LED Tube	200732x1	15	0.1	NONE	3,750	506	540	0.1	$ 82.26	$ 1,306.80	$ -	15.9	15.9
25	Girls	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	315	-	0.0	$ -	$ -	$ -		
35LED	127	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	129	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	131	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	133	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
32LED	C-Wing Hallway	36	1T 32 R F 2 (ELE)	F42LL	60	2.2	SW	3750	8,100	36	4 ft LED Tube	200732x2	30	1.1	NONE	3,750	4,050	4,050	1.1	$ 616.93	$ 8,413.20	$ -	13.6	13.6
35LED	140	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.2	OCC	3750	8,100	24	T 59 R LED	RTLED38	38	0.9	NONE	3,750	3,420	4,680	1.2	$ 712.90	$ 5,670.00	$ -	8.0	8.0
35LED	142	24	T 32 R F 3 (ELE)	F43ILL/2	90	2.2	OCC	3750	8,100	24	T 59 R LED	RTLED38	38	0.9	NONE	3,750	3,420	4,680	1.2	$ 712.90	$ 5,670.00	$ -	8.0	8.0
35LED	144	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	OCC	3750	2,700	8	T 59 R LED	RTLED38	38	0.3	NONE	3,750	1,140	1,560	0.4	$ 237.63	$ 1,890.00	$ -	8.0	8.0
35LED	146	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	148	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
25	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	315	-	0.0	$ -	$ -	$ -		
20LED	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	814	7	4 ft LED Tube	200732x1	15	0.1	NONE	3,750	394	420	0.1	$ 63.98	$ 1,016.40	$ -	15.9	15.9
25	Restroom	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	OCC	3750	315	3	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.1	NONE	3,750	315	-	0.0	$ -	$ -	$ -		
20LED	Restroom	7	S 28 P F 1 (ELE)	F41ILL	31	0.2	OCC	3750	814	7	4 ft LED Tube	200732x1	15	0.1	NONE	3,750	394	420	0.1	$ 63.98	$ 1,016.40	$ -	15.9	15.9
35LED	Janitor	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	3750	675	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,375	257	419	0.1	$ 63.43	$ 742.50	$ 35	11.7	11.2
35LED	154	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	141	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	OCC	3750	3,038	9	T 59 R LED	RTLED38	38	0.3	NONE	3,750	1,283	1,755	0.5	$ 267.34	$ 2,126.25	$ -	8.0	8.0
35LED	143	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1

Energy Audit of Burlington City High School
CHA Project No.28886
ECM-L3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS							RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
15LED	Locker Room	9	S 32 C F 2 (ELE)	F42LL	60	0.5	SW	3750	2,025	9	4 ft LED Tube	200732x2	30	0.3	C-OCC	3,375	911	1,114	0.3	$ 168.51	$ 2,373.30	$ 35	14.1	13.9
71	Locker Room	10	I 60	I60/1	60	0.6	SW	3750	2,250	10	CF 26	CFQ26/1-L	27	0.3	C-OCC	3,375	911	1,339	0.3	$ 202.78	$ 337.50	$ 35	1.7	1.5
71	Shower	8	I 60	I60/1	60	0.5	SW	3750	1,800	8	CF 26	CFQ26/1-L	27	0.2	C-OCC	3,375	729	1,071	0.3	$ 162.23	$ 324.00	$ 35	2.0	1.8
71	Hallway	3	I 60	I60/1	60	0.2	SW	3750	675	3	CF 26	CFQ26/1-L	27	0.1	NONE	3,750	304	371	0.1	$ 56.55	$ 20.25	$ -	0.4	0.4
71	Teacher Locker	2	I 60	I60/1	60	0.1	SW	3750	450	2	CF 26	CFQ26/1-L	27	0.1	C-OCC	3,375	182	268	0.1	$ 40.56	$ 283.50	$ 35	7.0	6.1
32LED	Coach Office	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	OCC	3750	900	4	4 ft LED Tube	200732x2	30	0.1	NONE	3,750	450	450	0.1	$ 68.55	$ 934.80	$ -	13.6	13.6
71	Team Locker	6	I 60	I60/1	60	0.4	SW	3750	1,350	6	CF 26	CFQ26/1-L	27	0.2	C-OCC	3,375	547	803	0.2	$ 121.67	$ 310.50	$ 35	2.6	2.3
32LED	Director Office	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	OCC	3750	450	2	4 ft LED Tube	200732x2	30	0.1	NONE	3,750	225	225	0.1	$ 34.27	$ 467.40	$ -	13.6	13.6
32LED	Entrance	6	1T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3750	1,350	6	4 ft LED Tube	200732x2	30	0.2	NONE	3,750	675	675	0.2	$ 102.82	$ 1,402.20	$ -	13.6	13.6
15LED	Girl Locker Room	9	S 32 C F 2 (ELE)	F42LL	60	0.5	SW	3750	2,025	9	4 ft LED Tube	200732x2	30	0.3	C-OCC	3,375	911	1,114	0.3	$ 168.51	$ 2,373.30	$ 35	14.1	13.9
71	Girl Locker Room	10	I 60	I60/1	60	0.6	SW	3750	2,250	10	CF 26	CFQ26/1-L	27	0.3	C-OCC	3,375	911	1,339	0.3	$ 202.78	$ 337.50	$ 35	1.7	1.5
71	Shower	8	I 60	I60/1	60	0.5	SW	3750	1,800	8	CF 26	CFQ26/1-L	27	0.2	C-OCC	3,375	729	1,071	0.3	$ 162.23	$ 324.00	$ 35	2.0	1.8
71	Hallway	3	I 60	I60/1	60	0.2	SW	3750	675	3	CF 26	CFQ26/1-L	27	0.1	NONE	3,750	304	371	0.1	$ 56.55	$ 20.25	$ -	0.4	0.4
146LED	Morris Gym	40	High Bay MH 400	MH400/1	458	18.3	SW	3750	68,700	40	BAYLED78W	BAYLED78W	93	3.7	C-OCC	3,375	12,555	56,145	14.6	$ 8,536.65	$ 34,037.82	$ 35	4.0	4.0
265LED	Morris Gym	4	Gym HB 8L CFL	CF42/8-L	376	1.5	SW	3750	5,640	4	BAYLED78W	BAYLED78W	93	0.4	C-OCC	3,375	1,256	4,385	1.1	$ 666.30	$ 3,646.78	$ 35	5.5	5.4
32LED	E-Wing Hallway	22	1T 32 R F 2 (ELE)	F42LL	60	1.3	SW	3750	4,950	22	4 ft LED Tube	200732x2	30	0.7	NONE	3,750	2,475	2,475	0.7	$ 377.01	$ 5,141.40	$ -	13.6	13.6
32LED	169	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	3750	900	4	4 ft LED Tube	200732x2	30	0.1	C-OCC	3,375	405	495	0.1	$ 74.89	$ 1,204.80	$ 35	16.1	15.6
71	171	10	I 60	I60/1	60	0.6	SW	3750	2,250	10	CF 26	CFQ26/1-L	27	0.3	NONE	3,750	1,013	1,238	0.3	$ 188.51	$ 67.50	$ -	0.4	0.4
32LED	175	4	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	3750	900	4	4 ft LED Tube	200732x2	30	0.1	C-OCC	3,375	405	495	0.1	$ 74.89	$ 1,204.80	$ 35	16.1	15.6
32LED	172	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	3750	450	2	4 ft LED Tube	200732x2	30	0.1	C-OCC	3,375	203	248	0.1	$ 37.45	$ 737.40	$ 35	19.7	18.8
71	172	12	I 60	I60/1	60	0.7	SW	3750	2,700	12	CF 26	CFQ26/1-L	27	0.3	C-OCC	3,375	1,094	1,607	0.4	$ 243.34	$ 351.00	$ 35	1.4	1.3
32LED	Café	56	1T 32 R F 2 (ELE)	F42LL	60	3.4	SW	3750	12,600	56	4 ft LED Tube	200732x2	30	1.7	C-OCC	3,375	5,670	6,930	1.7	$ 1,048.50	$ 13,357.20	$ 35	12.7	12.7
55LED	Café	8	2T 17 R F 3 (ELE)	F23ILL	47	0.4	SW	3750	1,410	8	2T 25 R LED	2RTLED	25	0.2	C-OCC	3,375	675	735	0.2	$ 111.11	$ 1,890.00	$ 35	17.0	16.7
32LED	Café	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	SW	3750	1,800	8	4 ft LED Tube	200732x2	30	0.2	C-OCC	3,375	810	990	0.2	$ 149.79	$ 2,139.60	$ 35	14.3	14.1
55LED	Kitchen	16	2T 17 R F 3 (ELE)	F23ILL	47	0.8	SW	3750	2,820	16	2T 25 R LED	2RTLED	25	0.4	NONE	3,750	1,500	1,320	0.4	$ 201.07	$ 3,240.00	$ -	16.1	16.1
32LED	Kitchen	5	1T 32 R F 2 (ELE)	F42LL	60	0.3	SW	3750	1,125	5	4 ft LED Tube	200732x2	30	0.2	NONE	3,750	563	563	0.2	$ 85.68	$ 1,168.50	$ -	13.6	13.6
32LED	Dishwasher	6	1T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3750	1,350	6	4 ft LED Tube	200732x2	30	0.2	NONE	3,750	675	675	0.2	$ 102.82	$ 1,402.20	$ -	13.6	13.6
32LED	Office	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	OCC	3750	1,800	8	4 ft LED Tube	200732x2	30	0.2	NONE	3,750	900	900	0.2	$ 137.10	$ 1,869.60	$ -	13.6	13.6
32LED	F-Wing Hallway	20	1T 32 R F 2 (ELE)	F42LL	60	1.2	SW	3750	4,500	20	4 ft LED Tube	200732x2	30	0.6	NONE	3,750	2,250	2,250	0.6	$ 342.74	$ 4,674.00	$ -	13.6	13.6
55LED	F-Wing Hallway	24	2T 17 R F 3 (ELE)	F23ILL	47	1.1	SW	3750	4,230	24	2T 25 R LED	2RTLED	25	0.6	NONE	3,750	2,250	1,980	0.5	$ 301.61	$ 4,860.00	$ -	16.1	16.1
35LED	184	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
35LED	186	18	T 32 R F 3 (ELE)	F43ILL/2	90	1.6	OCC	3750	6,075	18	T 59 R LED	RTLED38	38	0.7	NONE	3,750	2,565	3,510	0.9	$ 534.67	$ 4,252.50	$ -	8.0	8.0
35LED	188	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.2	OCC	3750	4,388	13	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,853	2,535	0.7	$ 386.15	$ 3,071.25	$ -	8.0	8.0
35LED	190	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	OCC	3750	5,063	15	T 59 R LED	RTLED38	38	0.6	NONE	3,750	2,138	2,925	0.8	$ 445.56	$ 3,543.75	$ -	8.0	8.0
35LED	192	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	OCC	3750	4,725	14	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,995	2,730	0.7	$ 415.86	$ 3,307.50	$ -	8.0	8.0
71	165	5	I 60	I60/1	60	0.3	SW	3750	1,125	5	CF 26	CFQ26/1-L	27	0.1	NONE	3,750	506	619	0.2	$ 94.25	$ 33.75	$ -	0.4	0.4
15LED	165	8	S 32 C F 2 (ELE)	F42LL	60	0.5	SW	3750	1,800	8	4 ft LED Tube	200732x2	30	0.2	NONE	3,750	900	900	0.2	$ 137.10	$ 1,869.60	$ -	13.6	13.6
32LED	181	10	1T 32 R F 2 (ELE)	F42LL	60	0.6	OCC	3750	2,250	10	4 ft LED Tube	200732x2	30	0.3	NONE	3,750	1,125	1,125	0.3	$ 171.37	$ 2,337.00	$ -	13.6	13.6
35LED	181	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	181	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	OCC	3750	675	2	T 59 R LED	RTLED38	38	0.1	NONE	3,750	285	390	0.1	$ 59.41	$ 472.50	$ -	8.0	8.0
35LED	189	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	3750	4,050	12	T 59 R LED	RTLED38	38	0.5	NONE	3,750	1,710	2,340	0.6	$ 356.45	$ 2,835.00	$ -	8.0	8.0
35LED	189	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	OCC	3750	2,363	7	T 59 R LED	RTLED38	38	0.3	NONE	3,750	998	1,365	0.4	$ 207.93	$ 1,653.75	$ -	8.0	8.0
35LED	193	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.3	OCC	3750	8,775	26	T 59 R LED	RTLED38	38	1.0	NONE	3,750	3,705	5,070	1.4	$ 772.30	$ 6,142.50	$ -	8.0	8.0
35LED	196	40	T 32 R F 3 (ELE)	F43ILL/2	90	3.6	OCC	3750	13,500	40	T 59 R LED	RTLED38	38	1.5	NONE	3,750	5,700	7,800	2.1	$ 1,188.16	$ 9,450.00	$ -	8.0	8.0
215LED	Auditorium	30	High Bay MH 250	MHPS/SCWA/250/1	288	8.6	SW	3750	32,400	30	BAYLED78W	BAYLED78W	93	2.8	C-OCC	3,375	9,416	22,984	5.9	$ 3,489.22	$ 25,595.87	$ 35	7.3	7.3
25	Auditorium	18	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.5	SW	3750	1,890	18	R 13 C CF 2 (ELE)	CFQ13/2-L	28	0.5	C-OCC	3,375	1,701	189	0.0	$ 26.65	$ 270.00	$ 35	10.1	8.8
15LED	Annex Classroom	2	S 32 C F 2 (ELE)	F42LL	60	0.1	OCC	3750	450	2	4 ft LED Tube	200732x2	30	0.1	NONE	3,750	225	225	0.1	$ 34.27	$ 467.40	$ -	13.6	13.6

APPENDIX D

New Jersey Board of Public Utilities Incentives

i. **Smart Start**

ii. **Direct Install**

iii. **Pay for Performance (P4P)**

iv. **Energy Savings Improvement Plan (ESIP)**

I. SMART START

NJ SmartStart Buildings

Program Overview

With New Jersey SmartStart Buildings ...

... A smart start now means better performance later! Whether you're starting a commer industrial project from the ground up, renovating existing space, or upgrading equipmen unique opportunities to upgrade the energy efficiency of the project.

Special Notice

Enhanced incentives are available for NJ SmartStart Building upgrades in buildings im Hurricane Sandy. Eligible projects receive an additional 50% and new incentives have added for high efficiency food service equipment.

Visit the Sandy web page for details and important links.

New Jersey SmartStart Buildings can provide a range of support — at no cost to you — substantial energy savings, both now and for the future. Learn more about:

- Project Categories
- Custom Measures
- Incentives for Qualifying Equipment and Projects
- Program Terms and Conditions
- Find a Trade Ally

Please note: pre-approval is required for almost all energy efficiency incentives. T you must submit an application form (and applicable worksheets) and receive an approv from the program before any equipment is installed (click here for complete Terms and Upon receipt of an approval letter, you may proceed to install the equipment listed on yc approved application. Equipment installed prior to the date of the approval letter is not e an incentive. **Any customer and/or agent who purchases equipment prior to the re incentive approval letter does so at his/her own risk.**

Getting Started

Submit your project application form as soon as you know you will be doing a constructi or replacing/adding equipment.

PAST PROGRAMS

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Apply for pre-approval by submitting an application for the type of equipment you have c install. The application should be accompanied by a related worksheet, where applicabl manufacturer's specification sheet (refer to the specific program requirements on the ba application for specs needed for your project) for the equipment you are planning to inst (Program representatives will review your application package and approve it, reject it, a advise you of upgrades in equipment that will save energy costs and/or increase your in

Support for Custom Energy-Efficiency Measures

Custom measures allows program participants the opportunity to receive an incentive fo energy-efficiency measures that are not on the prescriptive equipment Incentive list, but project/facility specific.

Incentives for Qualifying Equipment and Projects

Financial incentives are available for large and small projects. These incentives offset s maybe even all! — of the added cost to purchase qualifying energy-efficient equipment, provides significant long-term energy savings. Ranges of incentives are available for qu equipment (depending on type, size, and efficiency) in several categories.

Find out more about equipment incentives

For specific details on equipment requirements and financial incentives, including ince equipment not listed here, contact a program representative. Fiscal year financial incent be limited to a maximum of $500,000 per customer utility account and are available as f permits.

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COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

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NJ SMARTSTART BUILDINGS

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EDA PROGRAMS

SBC CREDIT PROGRAM

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Equipment Incentives

Special Notice

Enhanced incentives are available for NJ SmartStart Building upgrades in buildings im Hurricane Sandy. Eligible projects receive an additional 50% and new incentives have added for high efficiency food service equipment.

Visit the Sandy web page for details and important links.

More reasons for a smart start on your next project!

New Jersey SmartStart Buildings provides **financial incentives for qualifying equipment**. These incentives were developed to help our customers offset some of the added cost to purchase qualifying energy-efficient equipment, which provides significant long-term energy savings. A wide range of incentives are available for qualifying equipment (depending on type, size and efficiency).

Listed below are the types of qualifying equipment and ranges of incentives. For details on equipment requirements and full listings of incentives, refer to the **online application forms**.

Please note that almost all equipment incentives require pre-approval before equipment is installed. (**click for exceptions**)To start the pre-approval process, submit an Equipment Application, and appropriate Equipment Worksheets, for the type types of equipment you are planning to install along with equipment specification sheets (refer to the specific program requirements on the back of the application for specificatic needed for your project) and a current utility bill(s).

In order to be eligible to receive financial incentives under this Program, Applicants mus receive electric and/or gas service from one of the regulated electric and/or gas utilities 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.

Electric Chillers

Water-cooled chillers ($12 - $170 per ton)
Air-cooled chillers ($8 - $52 per ton)

Gas Cooling

Gas absorption chillers ($185-$450 per ton)
Gas Engine-Driven Chillers (Calculated through Custom Measure F

PAST PROGRAMS

TOOLS AND RESOURCES

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Desiccant Systems ($1.00 per cfm - gas or electric)

Electric Unitary HVAC

Unitary AC and split systems ($73 - $92 per ton)
Air-to-air heat pumps ($73 - $92 per ton)
Water-source heat pumps ($81 per ton)
Packaged terminal AC & HP ($65 per ton)
Central DX AC Systems ($40 - $72 per ton)
Dual Enthalpy Economizer Controls ($250)
Occupancy Controlled Thermostats ($75 each)
A/C Economizing Controls ($85 - $170 each)

Ground Source Heat Pumps

Closed Loop ($450-750 per ton)

Gas Heating

Gas-fired boilers < 300 MBH ($300 per unit)
Gas-fired boilers ≥ 300 MBH - 1500 MBH ($1.75 per MBH)
Gas-fired boilers ≥ 1500 MBH - ≤ 4000 MBH ($1.00 per MBH)
Gas-fired boilers > 4000 MBH (Calculated through Custom Measur
Gas furnaces ($300-$400 per unit)
Gas infrared heaters - indoor only ($300 - $500 per unit)
Boiler economizing controls ($1,200 - $2,700 per unit)

Variable Frequency Drives

Variable air volume ($65 - $155 per hp)
Chilled-water pumps ($60 per hp)
Compressors ($5,250 to $12,500 per drive)

Natural Gas Water Heating

Gas water heaters ≤ 50 gallons ($50 per unit)
Gas-fired water heaters > 50 gallons ($1.00 - $2.00 per MBH)
Tankless water heaters replacing a free standing water heater > 82 energy factor ($300 per heater)
Gas-fired booster water heaters ($17 - $35 per MBH)

Premium Motors

Three-phase motors ($45 - $700 per motor) **(Incentive was discor effective March 1, 2013 except for buildings impacted by Hurri Sandy. Approved applications will have the standard timefram year from the program commitment date to complete the instal**

Refrigerator/Freezer Case Premium Efficiency Motors (ECM)

Fractional (< 1 HP) Electronic Commutated Motors (ECM) ($40 per for replacement of existing shaded-pole motor in refrigerated/freeze

Prescriptive Lighting

New Linear Fluorescent

- T-12, HID and Incandescent to T-5 and T-8 ($25 - $200 p fixture) **(Note: T12 replacements are only available for buildings impacted by Hurricane Sandy)**
- New Induction ($70 per replaced HID fixture)
- New LED
  - Screw-in/Plug-in ($10 - $20 per lamp)
  - Refrigerator/Freezer Case ($30 - $65 per fixture)
  - Outdoor pole/arm/wall-mounted luminaires ($100 - $175 p fixture)
  - Display case ($30 per case)
  - Shelf-mounted display and task ($15 per linear foot)
  - Wall-wash, desk, recessed ($20 - $35 per fixture)
  - Parking garage luminaires ($100 per fixture)
  - Track or Mono-Point directional ($50 per fixture)
  - Stairwell and Passageway luminaires ($40 per fixture)
  - High-Bay, Low-Bay ($150 per fixture)
  - Bollard ($50 per fixture)
  - luminaires for Ambient Lighting of Interior Commercial Spa *Linear panels ($50 per fixture)*
  - Fuel pump canopy ($100 per fixture)
  - LED retrofit kits (custom measures)
- New Pulse-Start Metal Hallide ($25 per fixture)
- Linear Fluorescent Retrofit ($10 - $20 per fixture)
- Induction Retrofit ($50 per retrofitted HID fixture)
- New Construction/Complete Renovation (performance-based)

Note: Incentives for T-12 to T-5 and T-8 lamps with electronic ballast in facilities ($10 per fixture, 1-4 lamps) and T-5/T-8 high bay fixtures ($16 - per fixture) were discontinued effective March 1, 2013 for T-12 retrofits replacements except for buildings impacted by Hurricane Sandy. Appr applications will have the standard timeframe of one year from the pro commitment date to complete the installation

Lighting Controls

- Occupancy Sensors
  - Wall mounted ($20 per control)
  - Remote mounted ($35 per control)
  - Daylight dimmers ($25 per fixture controlled, $50 per fixtu office applications only)
  - Occupancy controlled hi-low fluorescent controls ($25 per controlled)
- HID or Fluorescent Hi-Bay Controls
  - Occupancy hi-low ($35 per fixture controlled)
  - Daylight dimming ($45 per fixture controlled)

Refrigeration

- Covers and Doors
  - Energy-Efficient doors for open refrigerated doors/covers per door)
  - Aluminum Night Curtains for open refrigerated cases ($3.5 linear foot)
- Controls
  - Door Heater Control ($50 per control)
  - Electric Defrost Control ($50 per control)
  - Evaporator Fan Control ($75 per control)
  - Novelty Cooler Shutoff ($50 per control)

Food Service Equipment

Cooking
- Combination Electric Oven/Steamer ($1,000 per oven)
- Combination Gas Oven/Steamer ($750 per oven)
- Electric Convection Oven ($350 per oven)
- Gas Convection Oven ($500 per oven)
- Gas Rack Oven ($1,000 single, $2,000 double)
- Gas Conveyor Oven ($500 small deck, $750 large deck)
- Electric Fryer ($200 per vat)
- Gas Fryer ($749 per vat)
- Electric Large Vat Fryer ($200 per vat)
- Gas Large Vat Fryer ($500 per vat)
- Electric Griddle ($300 per griddle)
- Gas Griddle ($125 per griddle)
- Electric Steam Cooker ($1,250 per steamer)
- Gas Steam Cooker ($2,000 per steamer)

Holding
- Full Size Insulated Cabinets ($300 per cabinet)
- Three Quarter Size Insulated Cabinets ($250 per cabinet)
- Half Size Insulated Cabinets ($200 per cabinet)

Cooling
- Glass Door Refrigerators ($75 - $150 per unit)
- Solid Door Refrigerators ($50 - $200 per unit)
- Glass Door Freezers ($200 - $1,000 per unit)
- Solid Door Freezers ($100 - $600 per unit)
- Ice Machines ($50 - $500 per unit)

Cleaning
- Dishwashers ($400 - $1,500 per unit)

Other Equipment Incentives*

- Performance Lighting ($1.00 per watt per square foot below progra incentive threshold, currently 5% more energy efficient than ASHR/ 2007 for New Construction only.)
- Custom electric and gas equipment incentives (not prescriptive)

*Equipment incentives are calculated based on type, efficiency, size, and ap and are evaluated on a case-by-case basis. Contact us for details.

II. DIRECT INSTALL

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

PROGRAMS

NJ SMARTSTART BUILDINGS

PAY FOR PERFORMANCE

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PROGRAM

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

PARTICIPATION STEPS

PARTICIPATING CONTRACTORS

SUSTAINABLE JERSEY

ENERGY BENCHMARKING

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

SBC CREDIT PROGRAM

Direct Install

NEW JERSEY'S CLEAN ENERGY PROGRAM
DIRECT Install

Let us pay up to 70% of your energy efficiency upgrade.

Sometimes, the biggest challenge to improving energy efficiency is knowing where t and how to get through the process. Created specifically for existing small to mediun facilities, Direct Install is a turnkey solution that makes it easy and affordable to upgr high efficiency equipment. Direct Install is designed to cut your facility's energy costs replacing lighting, HVAC and other outdated operational equipment with energy effic alternatives. The program pays up to 70% of retrofit costs, dramatically improving yo payback on the project. There is a $125,000 incentive cap on each project.

ELIGIBILITY

Existing small to mid-sized commercial and industrial f with a peak electric demand that did not exceed 200 k any of the preceding 12 months are eligible to participa Direct Install. Applicants will submit the last 12 months electric utility bills indicating that they are below the de threshold and have occupied the building during that ti Buildings must be located in New Jersey and served b the state's public, regulated electric or natural gas utilit companies.

SYSTEMS & EQUIPMENT ADDRESSED BY THE PROGRAM

- Lighting
- Heating, Cooling & Ventilation (HVAC)
- Refrigeration
- Motors
- Natural Gas
- Variable Frequency Drives

Measures eligible for Direct Install are limited to specific equipment categories, type capacities. Boilers may not exceed 500,000 Btuh and furnaces may not exceed 140,

III. PAY FOR PERFORMANCE (P4P)

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

PROGRAMS

NJ SMARTSTART BUILDINGS

PAY FOR PERFORMANCE

EXISTING BUILDINGS

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BECOME A PARTNER

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PROGRAM

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

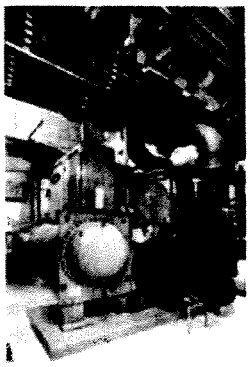
ENERGY BENCHMARKING

Pay for Performance - Existing Buildings

Download program applications and incentive forms.

The Greater the Savings, the Greater Your Incentives

Take a comprehensive, whole-building approach to saving energy in your existing facilit earn incentives that are directly linked to your savings. Pay for Performance relies on a program partners who provide technical services under direct you. Acting as your energy expert, your partner will develop a reduction plan for each project with a whole-building technica component of a traditional energy audit, a financial plan for fu energy efficient measures and a construction schedule for ins



Eligibility

Existing commercial, industrial and institutional buildings with demand over 100 kW for any of the preceding twelve months to participate including hotels and casinos, large office buildir family buildings, supermarkets, manufacturing facilities, scho shopping malls and restaurants. Buildings that fall into the fol customer classes are not required to meet the 100 kW dema to participate in the program: hospitals, public colleges and universities, 501(c)(3) non-p affordable multifamily housing, and local governmental entities. Your energy reduction p define a comprehensive package of measures capable of reducing the existing energy consumption of your building by 15% or more.

Exceptions to the 15% threshold requirement may be made for certain industrial, manuf water treatment and datacenter building types whose annual energy consumption is hea weighted on process loads. Details are available in the high energy intensity section of t page.

ENERGY STAR Portfolio Manager

Pay for Performance takes advantage of the ENERGY STAR Program with Portfolio Manager, EPA's interactive tool that allows facility managers to track and evaluate energy and water consumption across all of their buildings. The tool provides the opportunity to load in the characteristics and energy usage of your buildings and determine an energy performance benchmark score. You can then assess energy management goals over time, identify strategic opportunities for savings, and receive EPA recognition for superior energy performance.

This rating system assesses building performance by tracking and scoring energy use ir facilities and comparing it to similar buildings. That can be a big help in locating opportu cost-justified energy efficiency upgrades. And, based on our findings, you may be invite participate in the Building Performance with ENERGY STAR initiative and receive speci recognition as an industry leader in energy efficiency.

Incentives

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

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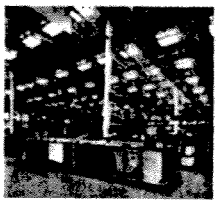
CONTACT US

Pay for Performance incentives are awarded upon the satisfactory completion of three p milestones:

Incentive #1 - Submittal of complete energy reduction plan prepared by an app program partner - Contingent on moving forward, incentives will be between $5 $50,000 based on approximately $.10 per square foot, not to exceed 50% of th annual energy expense.



Incentive #2 - Installation of recommended measures - Incentives are based on the projected level of electricity and natural gas savings resulting from the installation of comprehensive energy-efficiency measures.

Incentive #3 - Completion of Post-Construction Benchmarking Report - A completed report verifying energy reductions based on one year of post-implementation results. Incentives for electricity and natural gas savings will be based on actual savings, provided that the minimum performance threshold of savings has been achieved.

A detailed Incentive Structure document is available on the applications and form

Steps to Participation

Click here for a step-by-step description of the program.

Home | Residential | Commercial & Industrial | Renewable Energy
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New Jersey's Clean Energy PROGRAM
Your Power to Save
njcleanenergy.com

BPU New Jersey Board of Public Utilities

PAY FOR PERFORMANCE APPLICATION FORM

July 1, 2013 - June 30, 2014

Utility Serving Applicant: ☐ Atlantic City Electric ☐ Jersey Central Power & Light ☐ PSE&G
☐ New Jersey Natural Gas ☐ Elizabethtown Gas ☐ Rockland Electric Co. ☐ South Jersey Gas
☐ Other Electric Service Provider (please specify): _____
☐ Other Fuel Provider: _____ ☐ Oil: _____ ☐ Other (Please specify): _____

Instructions

1. Read the program material to determine project qualification.
2. Read the Participation Agreement and sign where indicated.
3. Fill out all applicable spaces on this form.
4. Provide a copy of the customer's company W-9 form.
5. Provide the most recent consecutive 12 month period of utility bills for the project.
6. Provide brief description of facility.
7. Partner must submit the application package via e-mail, mail or fax DIRECTLY to the Market Manager – see back of this form.

Approval of this Application is not an approval of the project's scope of work. Scope of work is only approved upon approval of the Energy Reduction Plan. See application and program guidelines for more information.

Customer/Owner Information (payment will be made to entity entered here)

Company Name		Project Contact/Title	
Company Address	City	State	Zip
Phone/Fax	E-mail	Federal ID/SSN	

Partner Information

Company Name		Project Contact/Title	
Company Address	City	State	Zip
Phone	Fax	E-mail	

Project Information

Project Name			
Building Address	City	State	Zip
Utility Account Number(s): Electric		Gas	
* Note: Please use the back of this page for additional utility accounts if quantity exceeds space allotment.			
Annual Peak kW Demand	Building Type		Number of Buildings
Size of Building(s) (gross sq/ft)	Direct, Master or Sub Metered		

Funding

❑ 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.

Do you expect to receive funding under any other efficiency programs? ☐ No ☐ Yes If Yes, please specify below:

Utility Program #1 – Utility: _____ Program Name: _____
Utility Program #2 – Utility: _____ Program Name: _____
Federal Program #1 – Organization: _____ Program Name: _____
Federal Program #2 – Organization: _____ Program Name: _____
Other Program – Organization: _____ Program Name: _____

Additional Project information

Additional Utility Account(s)

Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number
Account type	Account number

Additional Comments:

Complete this application form and send it directly to the Commercial/Industrial Market Manager by e-mail, mail or fax.

New Jersey's Clean Energy Program
c/o TRC Energy Services-P4P
900 Route 9 North, Suite 404 • Woodbridge, NJ 07095

Phone: 866-657-6278 • Fax: 732-855-0422
E-mail: P4P@NJCleanEnergy.com

Visit our website: NJCleanEnergy.com/P4P

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.

Pay For Performance-Existing Buildings

Participation Agreement

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.

Projects with a contract threshold of $14,187 (increasing to $15,444 effective July 1, 2014) are required to pay no less than prevailing wage rate to workers employed in the performance of any construction undertaken in connection with Board of Public Utilities financial assistance, or undertaken to fulfill any condition of receiving Board of Public Utilities financial assistance, including the performance of any contract to construct, renovate or otherwise prepare a facility, the operations of which are necessary for the receipt of Board of Public Utilities financial assistance. By submitting an application, or accepting program incentives, applicant agrees to adhere to New Jersey Prevailing Wage requirements, as applicable.

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 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 June 30, 2014 in order to be eligible for the fiscal year July 1, 2013-June 30, 2014 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 Gas Heating, Unitary HVAC or Motors having an incentive amount less than $5,000 that were installed within 12 months of receipt of the application. 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.

CUSTOMER'S SIGNATURE
PARTNER SIGNATURE
By signing, I certify that I have read, understand and agree to the Participation Agreement listed above.

IV. ENERGY SAVINGS IMPROVEMENT PLAN (ESIP)

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

PROGRAMS

NJ SMARTSTART BUILDINGS

PAY FOR PERFORMANCE

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PROGRAM

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

ENERGY BENCHMARKING

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

SBC CREDIT PROGRAM

PAST PROGRAMS

TOOLS AND RESOURCES

PROGRAM UPDATES

CONTACT US

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Energy Savings Improvement Program

A new State law allows government agencies to make energy related improvements to t facilities and pay for the costs using the value of energy savings that result from the imp Under Chapter 4 of the Laws of 2009 (the law), the "Energy Savings Improvement Program" (ESIP), provides all government agencies in New Jersey with a flexible tool to and reduce energy usage with minimal expenditure of new financial resources.

This Local Finance Notice outlines how local governments can develop and implement a their facilities. Below are two sample RFPs:

Local Government
School Districts (K-12)

All RFPs must be submitted to the Board for approval at ESIP@bpu.state.nj.us.

The Board also adopted protocols to measure energy savings:

Measuring Energy Savings
Procedures for Implementation

The ESIP approach may not be appropriate for all energy conservation and energy effic improvements. Local units should carefully consider all alternatives to develop an appro best meets their needs. Local units considering an ESIP should carefully review the Loc Notice, the law, and consult with qualified professionals to determine how they should a task.

The NJ Board of Public Utilities sponsored Sustainable Jersey in the creation of an ESIF Guidebook that explains how to implement the program. The guidebook also includes ca of successful projects and a list of helpful resources.

FIRST STEP – ENERGY AUDIT

For local governments interested in pursuing an ESIP, the first step is to perform an ene as prescribed in P.L.2012 c.55.

ENERGY REDUCTION PLANS

If you have an ESIP plan that needs to be submitted to the Board of Public Utilities, plea to ESIP@bpu.state.nj.us. Please limit the file size to 3MB (or break it into smaller files).

Frankford Township School District
Northern Hunterdon-Voorhees Regional High School
Manalapan Township *(**180 MB** - Right Click, Save As)*

ESIP PROGRAM

Final version 42413

BPU RULES

1. Public Entity must decide if they will use an ESCO or DIY method or Hybrid thereof prior to issuing the RFP and the RFP must state the intended method. A change in the project procurement model after the RFP closing date will be cause for immediate rejection and disqualification of potential Clean Energy program incentives.

2. RFP procedures shall be adhered to as per the legislation, including the use of BPU approved forms. Any alteration of the forms, without prior approval from the BPU shall be grounds for rejection.

3. RFP must include copy of an audit (ASHRAE Level II w/Level III for lighting) and audit must be prepared by a firm classified by DPMC in the 036 discipline.

4. All firms, including professional services, whether using ESCO or DIY model, must be DPMC classified.

5. If an Architect is engaged by the public entity, the architectural fees are the responsibility of the public entity and must be paid directly to the firm. These fees may be included in the energy cost savings analysis and payback.

   ESCO's may contract directly with an architectural firm, in which case the architectural firm serves as a subcontractor to the ESCO and the project related service costs may be included within the project's economic model.

6. Public entity shall conduct pre-bid meetings and site visits per existing statutes.

   In the interest of open public bidding transparency, it is a requirement of the BPU that all proposers must attend the pre-proposal bid meeting.

7. There shall be no negative cash flow in any year of the program.
   section 7 (1)(a)
   > "the energy savings resulting from the program will be sufficient to cover the cost of the program's energy conservation measures."

8. SREC values are not permitted to be used in the energy cost savings calculations.

9. Capital cost avoidance values are not to be used in the energy savings calculations.

10. Operational and Maintenance (O&M) cost savings may be permitted in the cost savings calculations, but only with supporting documentation.

11. Blended utility rates shall not be permitted. Use the actual utility tariff or local contracted rates if there is a third party supplier.

    For the RFP proposals, the public entity shall define the utility rates in the RFP

12. Contracted third party utility rates may only be used for the term of the contract (5 yr. maximum) Subsequent years are to be projected at the utility tariff rates plus the annual BPU escalation rates.

13. Public entity shall conduct M&V (measurement and verification) at the one (1) year operational date and shall provide a copy of the M&V report to the Board of Public Utilities.

    For the RFP proposals, the ESCO shall provide the cost for the one (1) year M&V only. For comparative purposes, the one year M&V pricing shall be indicated on the proposal Form VI, under the "Annual Service Costs" column. Additional M&V costs are at the discretion of the local unit and are not to be included in the proposal.

14. The decisions made by BPU staff regarding compliance or other issues that arise in connection with the RFP procurement process shall be considered a final decision of the BPU. Any appeal will need to be through the New Jersey Superior Court, Appellate Division.

15. For the RFP proposals only, Demand Response (DR) revenues claimed by ESCO's can only be projected for a maximum period of three (3) years. DR revenue projections beyond three years will not be permitted. DR revenues must be included and presented under the "Energy Rebates/Incentives" column of FORM VI.

16. ESCO "fees" proposed during the RFP phase of the project cannot increase post-award. ESCO's are required to maintain the fee percentages through final contract negotiations and construction of the Board approved Energy Savings Plan

17. Public Bid openings shall be held on the due date of the proposal submissions. The public entity shall announce the name of the bidder and the total dollar amount. After award of a contract, all proposals received will be made available by the owner for public inspection

18. Rejection of bids by the public entity shall be conducted in accordance with the appropriate sections of the applicable legislation, as stated in Title 40A:11-13.2. Additionally all proposals must be returned to the respective ESCO's upon rejection.

19. Field changes that exceed 5% of the project cost require BPU approval.

20. Energy Savings Plans (ESP) that is dependent upon incentives from the Clean Energy Program must review the current program requirements, at the time of application, for each incentive to insure eligibility. If any program incentive is denied, resubmission of all ESIP related forms will be necessary to remain ESIP qualified.

APPENDIX E

Photovoltaic Analysis

Burlington City Schools
Burlington City High School

Cost of Electricity	$0.151	/kWh
Electricity Usage	2,230,474	kWh/yr
System Unit Cost	$4,000	/kW

Photovoltaic (PV) Solar Power Generation - Screening Assessment

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	Federal Tax Credit	New Jersey Renewable ** SREC	Payback (without incentive)	Payback (with incentive)
$	kW	kWh	therms	$	$	$	$	$	Years	Years
$1,440,000	**360.0**	**436,799**	**0**	**$65,957**	**0**	**$65,957**	**$0**	**$69,888**	**21.8**	**10.6**

** Estimated Solar Renewable Energy Certificate Program (SREC) SREC for 15 Years= $160 /1000kwh

Area Output*
5,471 m2
58,889 ft2

Perimeter Output*
159 m
522 ft

Available Roof Space for PV:
(Area Output - 10 ft x Perimeter) x 85%
45,622 ft2

Approximate System Size: Is the roof flat? (Yes/No) Yes

8	watt/ft2	
364,975	DC watts	
360	kW	Enter into PV Watts

PV Watts Inputs***

Array Tilt Angle	20	Enter into PV Watts (always 20 if flat, if pitched - enter estimated roof angle)
Array Azimuth	180	Enter into PV Watts (default)
Zip Code	08016	Enter into PV Watts
DC/AC Derate Factor	0.83	Enter info PV Watts

PV Watts Output
436,799 annual kWh calculated in PV Watts program

% Offset Calc

Usage	2,230,474	(from utilities)
PV Generation	436,799	(generated using PV Watts)
% offset	20%	

* http://www.freemaptools.com/area-calculator.htm
** http://www.flettexchange.com
*** http://gisatnrel.nrel.gov/PVWatts_Viewer/index.html

PVWatts® Calculator

NREL NATIONAL RENEWABLE ENERGY LABORATORY

My Location | 100 Blue Devil Way, Burlington NJ 08016 » Change Location | Beta Release (?) | HELP | ALL NREL SOLAR TOOLS

RESOURCE DATA SYSTEM INFO RESULTS

Go to system info

436,799 kWh per Year

RESULTS

Print Results

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Energy Value ($)
January	2.11	19,524	2,948
February	4.37	37,375	5,644
March	3.79	34,061	5,143
April	4.68	39,405	5,950
May	5.23	44,938	6,786
June	5.75	46,222	6,980
July	6.83	55,782	8,423
August	5.14	41,867	6,322
September	4.40	35,434	5,351
October	3.84	33,322	5,032
November	3.38	29,658	4,478
December	2.18	19,212	2,901
Annual	4.31	436,799	$ 65,957

Download Results: Monthly | Hourly

Find A Local Installer

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and

uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Similarly, the “Energy Value” column simply multiplies the utility-average electricity price by production. Complex utility rates and financing can significantly impact the energy value. See Help for additional guidance.

Location and Station Identification

Requested Location	**100 Blue Devil Way, Burlington NJ 08016**
Weather Data Source	**PHILADELPHIA NE PHILADELPHIA, PA (TMY3)**
Latitude	**40.08° N**
Longitude	**75.02° W**

PV System Specifications *(Commercial)*

DC Rating	**360 kW**
DC to AC Derate Factor	**0.83**
Array Type	**Fixed (open rack)**
Array Tilt	**20°**
Array Azimuth	**180°**

Initial Economic Comparison

Average Cost of Electricity Purchased from Utility	**0.15 $/kWh**
Cost of Electricity Generated by System	**0.14 $/kWh**

These values can be compared to get an idea of the cost-effectiveness of this system. However, system costs, system financing options (including 3rd party ownership) and complex utility rates can significantly change the relative value of the PV system.

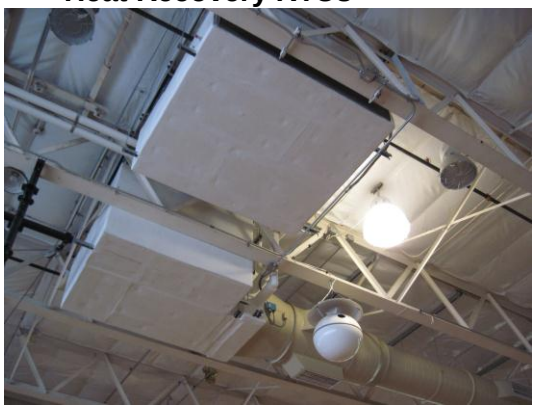
NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

PVWatts® is a registered trademark by Alliance for Sustainable Energy, LLC in Golden, CO, 80401.

APPENDIX F

Photos

ECM-1 Replace Gym AHUs with Heat Recovery RTUs

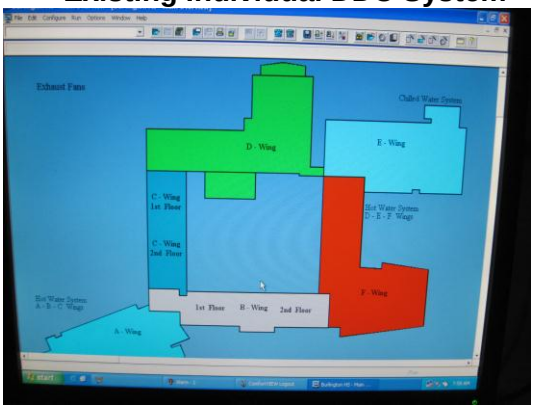


Existing AHU

ECM-2 Install Demand Control Ventilation (DCV) System for the Gymnasium, Café and Auditorium AHUs

Existing AHUs

ECM-3 Install a Central Web-Based DDC System for all Schools and Integrate the Existing Individual DDC System

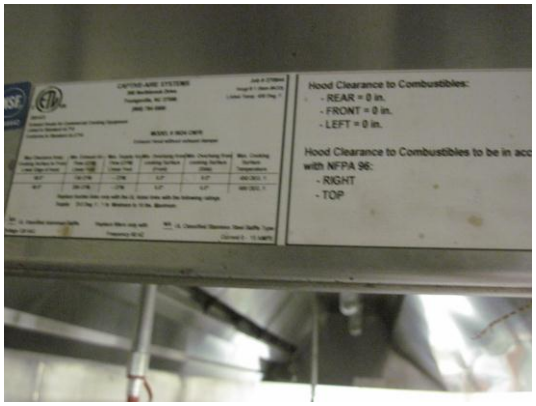


Existing Control Screen

ECM-4 Replace Domestic Hot Water Heaters with Condensing DHW Heater

Existing Heater

ECM-5 Install Variable Speed Kitchen Hood Exhaust System



Existing Hood

ECM-6 Install Control on the Walk-in Fridges and Freezers

Existing Walking Freezer

ECM-7 Replace Dishwasher Electric Booster Heater with Gas Booster Heater

Existing Heater

ECM-L1 Lighting Replacement / Upgrades

Existing Lights

ECM-L2 Install Lighting Controls (Occupancy Sensors)

No Pictures Available

ECM-L3 Lighting Replacements with Controls (Occupancy Sensors)

See ECM L-1 and L-2

APPENDIX G

EPA Benchmarking Report

ENERGY STAR® Statement of Energy Performance

40

ENERGY STAR® Score[1]

Burlington City High School

Primary Property Function: K-12 School
Gross Floor Area (ft²): 207,701
Built: 1956

For Year Ending: June 30, 2014
Date Generated: August 22, 2014

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Burlington City High School 100 Blue Devil Way Burlington, New Jersey 08016	_____ , (____)____-_____	____ _____ , (____)____-_____ _____

Property ID: 4137836

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
98.8 kBtu/ft²

Source EUI
180.3 kBtu/ft²

Annual Energy by Fuel	
Natural Gas (kBtu)	12,913,360 (63%)
Electric - Grid (kBtu)	7,610,378 (37%)

National Median Comparison	
National Median Site EUI (kBtu/ft²)	90.8
National Median Source EUI (kBtu/ft²)	165.8
% Diff from National Median Source EUI	9%
Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	1,649

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____Date: _____

Licensed Professional

____ _____
,
(____)____-_____
_____

Professional Engineer Stamp
(if applicable)