BLOOMFIELD SCHOOL DISTRICT

BLOOMFIELD MIDDLE SCHOOL

60 Huck Road Bloomfield NJ, 07003

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

June 2015

Prepared by:



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CHA PROJECT NO. 30040

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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 Bloomfield School District 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
Bloomfield Middle School	60 Huck Road Bloomfield NJ, 07003	153,380	1960

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)
Bloomfield Middle School	157,827	288	28,209	7.3

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.

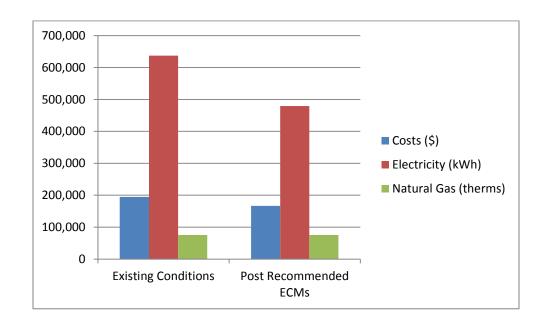
Summary of Energy Conservation Measures

ECM #	Energy Conservation Measure	Est. Costs (\$)	Est. Savings (\$/year)	Payback w/o Incentive	Potential Incentive (\$)*	Payback w/ Incentive	Recommended
ECM-1	Window Replacement	1,572,900	11,960	131.5	0	131.5	Ν
ECM-2	Install window AC controller	2,900	1,512	1.9	0	1.9	Υ
ECM-3	Replace rooftop units with high efficiency units	146,500	3,780	38.8	5,047	37.4	N
ECM-4	Replace DX split units with high efficiency units	73,508	4,115	17.9	2,388	17.3	N
ECM-5	Replace manual thermostats with programmable thermostats	4,901	2,628	1.9	825	1.6	Υ
ECM-6	Kitchen Hood Control	45,439	2,500	18.2	0	18.2	N
ECM- L1**	Lighting Replacements / Upgrades	139,024	16,507	8.4	20,060	7.2	N
ECM- L2**	Install Lighting Controls (Add Occupancy Sensors)	22,829	11,019	2.1	3,560	1.7	N
ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	197,006	24,069	8.2	23,620	7.2	Υ
	Total**	2,043,154	50,564	40.4	31,880	39.8	
	Total(Recommended)	204,807	28,209	7.3	24,445	6.4	

If Bloomfield School District implements the recommended ECMs, energy savings would be as follows:

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

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs (\$)	194,782	166,573	14%
Electricity (kWh)	636,960	479,133	25%
Natural Gas			
(therms)	75,621	75,333	0%
Site EUI			
(kbtu/SF/Yr)	63.5	59.8	



2.0 BUILDING INFORMATION AND EXISTING CONDITIONS

The following is a summary of building information related to HVAC, plumbing, building envelope, lighting, 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 representative photos of some of the existing conditions observed while onsite.

Building Name: Bloomfield Middle School **Address:** 60 Huck Road Bloomfield NJ 07003

Gross Floor Area: 153,380 sq. ft. **Number of Floors:** Two story building.

Year Built: 1960



General

Description of Spaces: The building is used as a middle school and has classrooms, library, auditorium, gymnasium, kitchen, cafeteria, computer classrooms, fitness center, offices, storage rooms, restrooms and a boiler room.

Description of Occupancy: The facility has 135 permanent employees working during regular school hours.

Number of Computers: The building has approximately 190 desktop and laptop computers. **Building Usage:** Normal operating hours for the school are from 8.30 AM to 3.30 PM. However, some of the employees like office staff, teaching staff and custodial staff work before and after the normal school operating hours.

Construction: Structural steel framing with concrete masonry unit walls having a brick exterior facade.

Roof: The building has a flat roof with a black rubber membrane waterproofing. It is believed that the roof is well insulated and appears to be in good condition. Therefore no ECM associated with the roof is evaluated

Windows: The original building has single pane windows and the windows are in fair condition. The 2000 section of the school has double pane windows and the windows are in good condition. An ECM related to window replacement of windows in the original building has been evaluated.

Exterior Doors: Exterior main doors are steel having glass panels and are in good condition. The door seals and sweeps show signs of wear. We have included the replacement of door seals and sweeps as an O&M measure.

Heating Ventilation & Air Conditioning (HVAC) Systems

Heating: The building is heated by two Superior hot water boilers located in the boiler room. The boilers have an input rating of 10,500 MBH input each and installed in 1960. Both boilers are past their useful life. Four hot water pumps, three working and one standby, installed in the boiler room circulate heating hot water to all the unit ventilators, heating and ventilation units and finned tube radiators of the original building. Another set of two pumps, one working and one standby, also installed in the boiler room circulates heating hot water to unit ventilators of the 2000 wing. All classrooms and the cafeteria are provided with unit ventilators. Hallways, stairways, storage spaces and offices are provided with recessed convectors or finned tube radiators. There are four high level wall mounted heating and ventilating units with hot water heating coils heating the gymnasium. Additionally, there are four ceiling mounted hot water unit heaters heating the gymnasium. The auditorium is heated by two heating and ventilation units with hot water heating coils installed in a mechanical room on the roof adjacent to the auditorium. During our walkthrough we were informed that the heating plant is being replaced and the design for the same is in progress. ECMs related to replacing the hot water boilers and hot water pumps have not been evaluated.

Cooling: The school has several spaces that are air conditioned. The library and the assembly hall are provided with Trane rooftop units with gas heating. The library unit is of 25 ton capacity and the assembly hall unit is of 10 ton capacity. Similarly, classrooms 112 and 113 are each provided with rooftop unit of 5 ton capacity with gas heating. Science classrooms 151, 153 and 155 are air conditioned by an 18 ton capacity McQuay rooftop unit with gas heating. 14 classrooms on the first and second floors of the 2000 wing are air conditioned by self-contained unit ventilators with hot water heating coils. Principal's office, guidance and general office is cooled by a 7 ½ ton capacity DX split ac unit. Hallways in the science wing are cooled by 5 DX split ac units. Window air conditioners are provided in 14 classrooms. All equipment, except window air conditioners, was installed in 2000 and is in fair condition. ECMs related to replacing the equipment with high efficiency units have been evaluated. Window air conditioners are in good condition; however, an ECM related to installing window air conditioner controllers has been evaluated to improve energy savings.

Details of the equipment are shown in the Table below:

Description	Manufacturer Name	Equipment Type / Utility	Capacity/Size /Efficiency	Location	Areas/Equipment Served
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Boilers	Superior	Gas fired hot water boilers	10,500 MBH input each	Boiler Room in basement	Heating system for whole School
Heating Hot Water Pumps	Bell and Gossett	Centrifugal Pump with 5HP electric motor	N/A	Boiler Room in basement	Heating for whole school except 2000 section
Heating Hot Water Pumps	Armstrong	Centrifugal Pump with 2 HP electric motor	36 GPM @ 50 Ft. Head	Boiler Room in basement	Heating for 2000 section
Unit Ventilators	AAF	Unit Ventilator with self- contained cooling and hot water heating coil	N/A	Classrooms in 2000 section	Classrooms
Unit Ventilators	N/A	Unit Ventilator with hot water heating coil	N/A	Classrooms	Classrooms
Heating and Ventilation Unit	N/A	Heating and Ventilation Unit with hot water heating coil	N/A	Gymnasium	Gymnasium
Heating and Ventilation Unit	N/A	Heating and Ventilation Unit with hot water heating coil	N/A	Auditorium	Auditorium
Rooftop Unit	Allied Commercial	Rooftop Unit with electric cooling	5 Ton nominal cooling capacity	Roof	Classroom 112
Rooftop Unit	Lennox	Rooftop Unit with electric cooling	53,500 BTU nominal cooling capacity	Roof	Classroom 113
Rooftop Unit	Trane	Rooftop Unit with electric cooling and gas heating	10 ton nominal cooling and 135 MBH Input/109.35 MBH Output gas furnace	Roof	Library Wing

Rooftop Unit	Trane	Rooftop Unit with electric cooling and gas heating	25 ton nominal cooling and 250 MBH Input/203 MBH Output gas furnace	Roof	Library Wing
Rooftop Unit	McQuay	Rooftop Unit with electric cooling and gas heating	18 ton nominal cooling and 400 MBH Input/320 MBH Output gas furnace	Roof	Science Classrooms 151,153 and 155
DX Split AC Units	Arcoaire	DX Split AC unit with air cooled condensing unit	4 ton nominal cooling capacity	Roof	Hallways
DX Split AC Units	N/A	DX Split AC unit with air cooled condensing unit	7/12 ton nominal cooling capacity	Roof	Principal's Office and Main Office
Unit Heater	N/A	Unit heaters with hot water heating coils	N/A	Ceiling of Gymnasium	Gymnasium

Ventilation: Unit ventilators provided in classrooms take in outside air for ventilation through a ducted connection to an outside air intake louver. Outside air is controlled by unit ventilator dampers that are pneumatically operated. The heating and ventilation units have ducted air intake connections from outside air intake louvers. All the rooftop units are equipped with integral outside air intakes with control dampers. As ventilation rates are assumed to be minimum, there are no ECMs associated with the ventilation system.

Exhaust: This building has multiple fractional HP exhaust fans serving restrooms and general exhaust located on the roof. The fans are enclosed and therefore the capacities of fan motors are unknown. No ECMs were evaluated for the exhaust fans.

Controls Systems

The overall building controls are pneumatically operated. The boilers' operation is controlled by both an outside air temperature control and a time clock. Unit ventilators are equipped with hot water control valves controlled by room thermostats. All heating and ventilation units are controlled by three way control valves. All controls are operated by pneumatic controls. A Quincy air compressor with a Hankison dryer unit is installed in the boiler room. Classroom unit ventilator thermostats were reported to be set at 72 deg F, however, the users manually adjust

the temperature settings to suit their needs. The heating plant is turned on at 6.30 AM and turned off at 6.30 PM. A centrally located temperature sensor activates the heating system if the temperature is sensed below 50 deg F. The control system is well maintained and is in good condition.

Although the existing pneumatic control system is in good working condition and provides basic day/night functions, the School District should consider replacing the existing pneumatic control system with a Direct Digital Control (DDC) system. The advantages of this type of system include individual unit controllability and scheduling, trending of set points and alarm notifications for malfunctioning devices. Front end graphics available in a DDC system enable the maintenance staff to see the functioning of all systems at one location and provide service to trouble spots quickly and efficiently. Web based control systems allow access and adjustment from remote locations. The cost as well as the payback period for upgrading the pneumatic control system to a DDC control system is high, therefore further study is recommended prior to pursuing this as an energy conservation measure.

All rooftop units, DX split ac units and self-contained unit ventilators are controlled by individual thermostats that are electrically operated. Window air conditioners are equipped with built in thermostats. Temperature set points for rooftop units, unit ventilators and DX split ac units were reported to be set at 72°F. An ECM related to replacing the manually operated thermostats with programmable thermostats has been evaluated. Also, an ECM related to installing window AC unit controllers has been evaluated.

Domestic Hot Water Systems

Domestic hot water is generated in a domestic hot water tank installed in the boiler room and is equipped with a hot water heat exchanger. Heating hot water from the hot water boiler is circulated through the heat exchanger. The hot water boiler runs through the year to provide domestic hot water to the school. Domestic hot water is circulated by a Bell and Gossett pump also installed in the boiler room. All equipment is original installed in 1960. During our walkthrough we were informed that the heating plant is being replaced and the design for the same is in progress. Hence no ECM related to domestic hot water system has been evaluated.

Kitchen Equipment

The school has a kitchen and food is prepared daily. Kitchen equipment consists of gas ranges, three compartment sinks and a dish washer. There are three freezer units, three commercial refrigerators, two electric ovens and one gas oven. Kitchen exhaust hood is provided for the gas range. All the equipment is in good working condition. However, to improve energy savings an ECM related to kitchen hood control has been evaluated. Also, a recommendation is made to replace kitchen equipment with energy star rated equipment when needed.

Plug Load

This building has computers, printers/copiers fitness and exercise equipment which contribute to the plug load in the building. Plug load is minimal and an O&M recommendation has been included to purchase Energy Star rated equipment when old ones need replacement.

Plumbing Systems

The urinals and toilets appear to be high flow plumbing fixtures. The sink faucets do not appear to have low-flow type aerators. An analysis for reducing the water consumption was not performed since the school informed us that water is provided to them at no cost. Although the cost of water usage in most facilities is relatively small compared with costs of electric and gas usage, reducing water usage helps conserve and protect vital water supply sources. Hence, a recommendation has been included in the O&M section to install low-flow plumbing fixtures and aerators when fixture replacement is planned.

Lighting Systems

The school has a mixture of T-12 and T-8 fluorescent lighting fixtures. The auditorium has forty three (43) 150 watt metal halide lights and the gymnasium has fifty (50) 250 watt metal halide lights. Some spaces like the boiler room, restrooms, janitor's closets and storage rooms are provided with incandescent lights. Exterior lights are a mixture of incandescent and metal halide lights. All the lights in this building are controlled by manual switches except exterior lights which are controlled by timer. LED lights are recommended in this study. We have provided three alternatives for the observed 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	Direct Energy	PSE&G

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

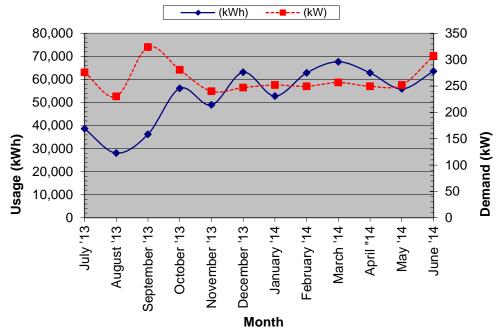
Electric				
Annual Consumption	636,960	kWh		
Annual Cost	117,795	\$		
Blended Unit Rate	0.185	\$/kWh		
Supply Rate	0.152	\$/kWh		
Demand Rate	6.57	\$/kW		
Peak Demand	324.0	kW		
Natu	ıral Gas			
Annual Consumption	75,621	Therms		
Annual Cost	76,987	\$		
Unit Rate	1.018	\$/therm		

Blended Rate: Average rate charged determined by the annual cost / annual usage

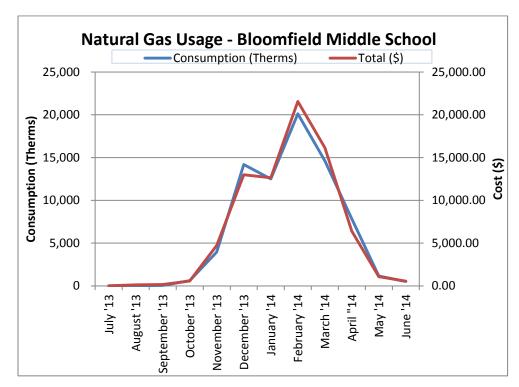
Supply Rate: Estimated

Demand Rate: Rate charged for actual electrical demand in kW (based on most recent electric bill)





The electric usage fluctuates with the building usage. The consumption during July and August months is lower due to holidays when air conditioning units are not in operation and lighting load is minimum.



Natural gas in the building is used by the hot water boilers and kitchen. The gas usage in the non-heating season is small and only for DHW heating and kitchen. 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.

Com	Recommended to			
Utility	Units	Average Rate	NJ Average Rate	Shop for Third
				Party Supplier?
Electricity	\$/kWh	\$0.185	\$0.13	Y
Natural Gas	\$/Therm	\$1.018	\$0.96	Y

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

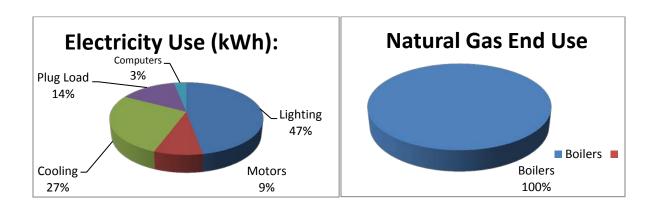
Additional information on selecting a third party energy supplier is available here:

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



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.

Site EUI kBtu/ft²/yr	Source EUI (kBtu/ft²/yr)	Energy Star Rating (1-100)
63.5	96.3	57

The school building's Energy Star score is 57. The score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide. A score of 50 represents median energy performance and a score of 75 or higher indicates that the building is a top performer. The site EUI of the school building is 63.5 and source EUI is 96.3. The building has lower EUIs than the national median EUIs (national median site EUI is 67.8 kBtu/ft² and national median source EUI is 102.8 kBtu/ft²). The EUI of this building is (-)6% lower than national median. The EUI could be further reduced after implementing some of the proposed energy conservation measures.

The EPA Portfolio Manager can be accessed with the following.

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 Window replacement

The original building has all single pane windows. The 2000 wing has double pane windows. Single pane windows lead to large amount of the heating/cooling loss. Replacing these old windows with high heat resistance double pane windows will help reduce the energy loss and save energy.

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

ECM-1 Window replacement

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without incentive)	Payback (with
Cost	E	lectricity	Natural Gas	Total		incentive		incentive)
\$	kW	kWh	Therms	\$		\$	Years	Years
1,572,900	0 0		11,748	11,960	(8.0)	0	131.5	131.5

^{*}Incentive shown, if available, is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is not recommended due to the long payback period.

5.2 ECM-2 Install window AC controller

Window A/C units are currently controlled manually by the occupants and are not turned off when the room is unoccupied. This ECM evaluates implementation of a digital timer device that will automatically turn the window A/C unit off at a preset time.

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

ECM-2 Install window AC controller

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without incentive)	Payback (with
Cost	El	ectricity	Natural Gas	Total		incentive		incentive)
\$	kW	kWh	Therms	\$		\$	Years	Years
2,900	0 8,174		0	1,512	6.8	0	1.9	1.9

^{*} Incentive shown, if available, is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended.

5.3 ECM-3 Replace rooftop units with high efficiency units

This ECM evaluates the energy savings associated with replacing older less efficient heating and cooling equipment with modern high efficiency unitary equipment which has the same capacities. Calculations for savings in heating have not been made since the heat exchanger efficiencies are the same.

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

ECM-3 Replace rooftop units with high efficiency units

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without	Payback (with incentive)	
	El	lectricity	Natural Gas	Total		incentive	incentive)		
\$	kW	kWh	Therms	\$		\$	Years	Years	
146,500	10	19,773	0	3,780	(0.5)	5,047	38.8	37.4	

^{*} Incentive shown, if available, is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is not recommended due to the long payback period.

5.4 ECM-4 Replace DX split units with high efficiency units

There are five split DX ac units - one serving the Principal's office and four serving the hallways. These units are 15 years old and have lived their useful life. This ECM evaluates energy savings by replacing the units with modern high efficiency units of the same capacity. Savings on heating have not been made because the heat exchanger efficiencies are the same.

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

ECM-4 Replace DX split units with high efficiency units

Budgetary	Budgetary Annual Utility Savings					Potential Incentive*	Payback (without	Payback (with	
Cost	EI	ectricity	Natural Gas	Total			incentive)	incentive)	
\$	kW kWh		Therms	\$		\$	Years	Years	
73,508	0	0 22,241 (4,115	(0.2)	2,388	17.9	17.3	

^{*} Incentive shown, if available, is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

5.5 ECM-5 Replace manual thermostats with programmable thermostats

This measure assesses the energy savings associated with replacing the standard non programmable thermostat with a programmable thermostat allowing for unoccupied temperature set-back

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

ECM-5 Replace manual thermostats with programmable thermostats

Budgetary Cost	Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without	Payback (with
Cost	Electricity	Natural Gas	Total		incentive	incentive)	incentive)

This measure is not recommended due to the long payback period.

\$	kW	kWh	Therms	\$		\$	Years	Years
4,901	0	12,621	288	2,628	7.0	825	1.9	1.6

^{*} Incentive shown, if available, is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is recommended.

5.6 ECM-6 Kitchen Hood Control

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 adjusts the exhaust 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.

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

ECM-6 Kitchen Hood Control

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without	Payback (with incentive)	
Cost	EI	ectricity	Natural Gas	Total		incentive	incentive)		
\$	kW kWh		Therms	\$		\$	Years	Years	
45,439	0 1,456		2,191	2,500	(0.2)	0	18.2	18.2	

^{*} Incentive shown, if available, is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is not recommended due to the long payback period.

5.7.1 ECM-L1 Lighting Replacement / Upgrades

The school has a mixture of T-12 and T-8 fluorescent lighting fixtures. The All Purpose room has twenty eight (28) 400 watt metal halide lights and the stage has six (6) 400 watt metal halide lights. Some spaces like the boiler room, restrooms, janitor's closets and storage rooms are provided with incandescent lights. Exterior lights are a mixture of incandescent and compact fluorescent lights. All the lights in this building are controlled by manual switches except exterior lights which are controlled by timer.

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	Payback (with
Cost	Ele	ectricity	Natural Gas	Total		incentive)	incentive)	
\$	kW kWh		Therms	\$		\$	Years	Years
139,024	41 87,283		0	16,507	1.1	20,060	8.4	7.2

^{*} LED retrofits must go through the "custom" measures incentive option under New Jersey SmartStart Program. There are no "prescriptive" incentives for LED retrofits. Projects must achieve a minimum of 75,000 kWh annual savings to qualify for "custom" incentives. See section 6.0 for other incentive opportunities

This measure is not recommended in lieu of ECM L3.

5.7.2 ECM-L2 Install Lighting Controls (Occupancy Sensors)

The majority of the interior lights are controlled by wall mounted 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		Annua	l Utility Savings		ROI	Potential	Payback (without	Payback (with	
Cost	E	ectricity	Natural Gas	Incentive	incentive	incentive)	incentive)		
\$	kW	kWh	Therms	\$		\$	Years	Years	
22,829	0 72,493		0	11,019	7.8	3,560	2.1	1.7	

^{*} 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.

5.7.3 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	Payback (with	
Cost	Ele	ectricity	Natural Gas	Total	incentive		incentive)	incentive)	
\$	kW kWh		Therms	\$		\$	Years	Years	
197,006	41 137,032		0	24,069	1.2	23,620	8.2	7.2	

^{*} LED retrofits must go through the "custom" measures incentive option under New Jersey SmartStart Program. There are no "prescriptive" incentives for LED retrofits. Projects must achieve a minimum of 75,000 kWh annual savings to qualify for "custom" incentives. See section 6.0 for other incentive opportunities

This measure is recommended.

5.8 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:

- Replace door seals and sweeps.
- Purchase Energy Star equipment when old ones need replacement.
- Upgrade the plumbing fixtures to low flow plumbing fixtures and aerators when needed

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 city 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.

Bloomfield Middle School does not qualify for the direct install program since the peak electric demand is higher than 200 KW.

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/SFMinimum 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.

<u>Electric</u>

- 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.

<u>Gas</u>

- 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.

<u>Gas</u>

- 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	Potential PV
Area	Array Size
(Ft ²)	(kW)
30,309	240

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 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 \$200/SREC for 2015 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 – 240 kW System

Budgetary Cost	Annual Utility Savings		Total Savings	New Jersey Renewable SREC	Payback (without SREC)	Payback (with SREC)	Recommended	
	Elec	tricity	Natural Gas					Re
\$	kW	kWh	Therms	\$	\$	Years	Years	Y/N
\$960,000	240	305,972	0	\$56,605	\$61,194	17.0	8.1	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 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.

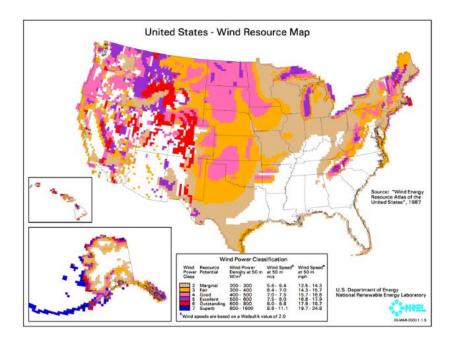
Several options exist for using active solar thermal systems for space heating. The most common method is called a passive solar hot water system involves using glazed collectors to heat a liquid held in a storage tank (similar to an active solar hot water system described above which requires pumping). 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 building 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 building.

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 building.

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 Bloomfield School District 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 2014 through December 2014 the following table summarizes the electricity load profile for the building.

Building Electric Load Profile

<u> </u>	<u></u>	<u> </u>		
			Onsite	
Peak Demand	Min Demand	Avg Demand	Generation	Eligible?
kW	kW	kW	Y/N	Y/N
324.0	230.4	263.8	Υ	Υ

*the demand is estimated from one month bill

This measure is recommended.

8.0 CONCLUSIONS & RECOMMENDATIONS

The following section summarizes the LGEA energy audit conducted by CHA for the Bloomfield School District at Bloomfield Middle School.

The following projects should be considered for implementation:

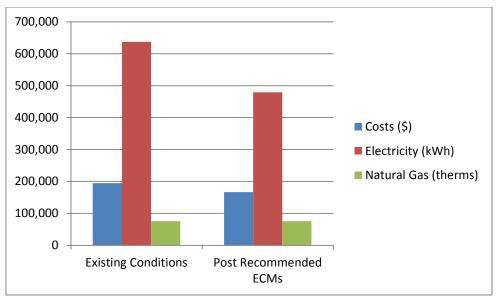
- Install window AC controllers
- Replace manual thermostats with programmable thermostats
- Lighting Replacements with Controls (Occupancy Sensors)

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)
157,827	288	\$28,209	7.3

If the Bloomfield School District implements the recommended ECMs, energy savings would be as follows:

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs (\$)	194,782	166,573	14%
Electricity (kWh)	636,960	479,133	25%
Natural Gas (therms)	75,621	75,333	0%
Site EUI (kbtu/SF/Yr)	63.5	59.8	



Next Steps: This energy audit has identified several areas of potential energy savings. Bloomfield School District can use this information to pursue incentives offered by the NJBPU's NJ Clean Energy Program. A close-out meeting will be scheduled with school staff members to review the ECMs and possible incentive options.



Bloomfield Middle School 60 Huck Road Bloomfield, NJ 07003

Bloomfield Middle School

Annual Utilities

12-month Summary

Electric					
Annual Usage	636,960	kWh/yr			
Annual Cost	117,795	\$			
Blended Rate	0.185	\$/kWh			
Consumption Rate	0.152	\$/kWh			
Demand Rate	6.57	\$/kW			
Peak Demand	324.0	kW			
Min. Demand	230.4	kW			
Avg. Demand	263.8	kW			
Natural Gas					
Annual Usage	75,621	Therms/yr			
Annual Cost	76,987	\$			
Rate	1.018	\$/Therm			

Bloomfield Middle School 60 Huck Road Bloomfield, NJ 07003

Utility Bills: Account Numbers

Account Number	School Building	<u>Location</u>	<u>Type</u> <u>Notes</u>
4200596601	Bloomfield Middle School	60 Huck Road Bloomfield, NJ 07003	Electricity
4200596601	Bloomfield Middle School	60 Huck Road Bloomfield, NJ 07003	Gas
6759414306	Bloomfield Middle School	60 Huck Road Bloomfield, NJ 07003	Gas

Bloomfield Middle School 60 Huck Road Bloomfield, NJ 07003

For Service at: **Bloomfield Middle School**

Delivery -PSE&G DIRECT ENERGY

Account # Meter # 778011489

4200596601 Supplier -

Electric Service

			Provider Charges Usage (kWh) vs. Demand (kW) Charges				nd (kW) Charges				Unit Costs			
	Consumption	Demand	Delivery		Supplier	Total	Consumption		Demand	Ble	ended Rate	Co	nsumption Rate	Demand
Month	(kWh)	(kW)	(\$)		(\$)	(\$)	(\$)		(\$)		(\$/kWh)		(\$/kWh)	(\$/kW)
July '13	38,640	276.0	\$ 4,845.89	\$	4,583.81	\$9,429.70	\$ 6,124.19	\$	3,305.51	\$	0.24	\$	0.16	\$ 11.98
August '13	28,080	230.4	\$ 3,981.14	\$	3,370.46	\$7,351.60	\$ 4,592.21	\$	2,759.39	\$	0.26	\$	0.16	\$ 11.98
September '13	36,240	324.0	\$ 5,348.34	\$	4,385.09	\$9,733.43	\$ 5,853.05	\$	3,880.38	\$	0.27	\$	0.16	\$ 11.98
October '13	56,160	280.8	\$ 3,066.93	\$	6,503.33	\$9,570.26	\$ 8,574.99	\$	995.27	\$	0.17	\$	0.15	\$ 3.54
November '13	48,960	240.0	\$ 2,707.47	\$	5,740.03	\$8,447.50	\$ 7,596.84	\$	850.66	\$	0.17	\$	0.16	\$ 3.54
December '13	63,120	247.2	\$ 3,161.70	\$	7,298.11	\$10,459.81	\$ 9,583.63	\$	876.18	\$	0.17	\$	0.15	\$ 3.54
January '14	52,800	252.0	\$ 2,832.87	\$	6,284.88	\$9,117.75	\$ 8,224.56	\$	893.19	\$	0.17	\$	0.16	\$ 3.54
February '14	62,880	249.6	\$ 3,072.75	\$	7,473.02	\$10,545.77	\$ 9,661.09	\$	884.68	\$	0.17	\$	0.15	\$ 3.54
March '14	67,680	256.8	\$ 3,236.02	\$	7,647.84	\$10,883.86	\$ 9,973.66	\$	910.20	\$	0.16	\$	0.15	\$ 3.54
April "14	62,880	249.6	\$ 3,071.56	\$	7,061.42	\$10,132.98	\$ 9,248.30	\$	884.68	\$	0.16	\$	0.15	\$ 3.54
May '14	55,920	252.0	\$ 2,879.47	\$	6,279.82	\$9,159.29	\$ 8,266.10	\$	893.19	\$	0.16	\$	0.15	\$ 3.54
June '14	63,600	307.2	\$ 5,820.99	\$	7,142.28	\$12,963.27	\$ 9,295.77	\$	3,667.50	\$	0.20	\$	0.15	\$ 11.94
Total (last 12-months)	636,960	324.00	\$44,025.13		\$73,770.10	\$117,795.23	\$96,994.40		\$20,800.83	\$	0.185	\$	0.152	\$ 6.571
Notes	1	2	3		4	5	6		7		8		9	10

Based on Direct Energy bills, amounts for Supplier \$ are calculated as follows:

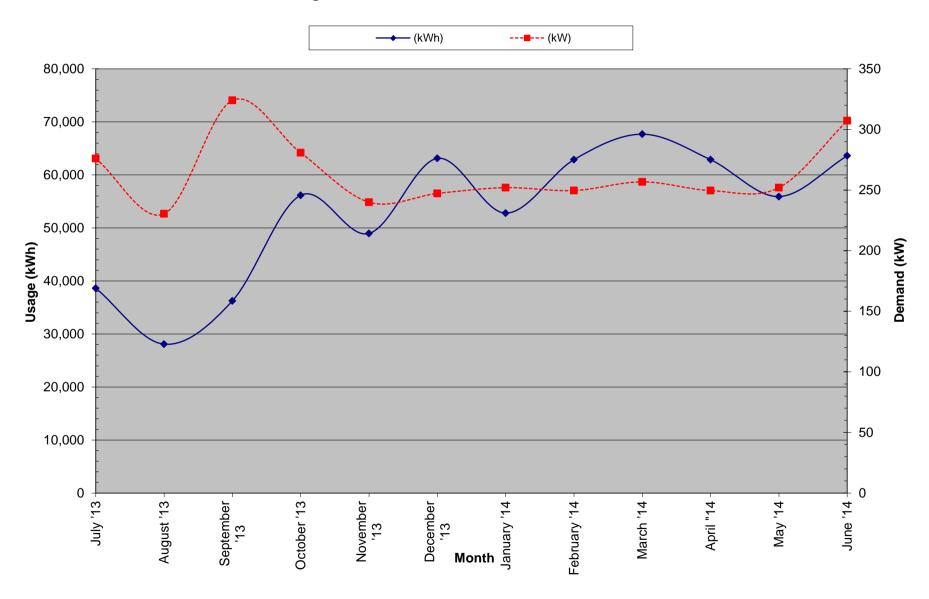
July '13 thru Oct '13 - \$0.1092/KWH + KW Demand x \$1.32 Nov '13 and Dec '13 - \$0.1092/KWH + KW Demand x \$1.64

Jan '14 - \$0.1092/KWH + KW Demand x \$2.06

Feb '14 - \$0.1092/KWH + KW Demand x \$2.43

March '14 - \$0.1092/KWH + Trans. Adj. \$0.0038/KWH Apr '14 thru June '14 - \$0.1092/KWH + Trans. Adj. \$0.0031/KWH

Electric Usage - Bloomfield Middle School



Bloomfield Middle School 60 Huck Road Bloomfield, NJ 07003

For Service at: Bloomfield Middle School

Account No.: 4200596601 6759414306

Meter No.: 3216985 1866271

Natural Gas Service

Delivery - PSE&G Supplier - PSE&G

		Charges							Unit Costs					
Month	Consumption (Therms)	D	elivery (\$)	,	Supply (\$)		Total (\$)		elivery / I herm)	Supply (\$/Therm)		(\$/	Total Therm)	
July '13	10	\$	15	\$	7	\$	22	\$	1.50	\$	0.70	\$	2.20	
August '13	18	\$	121	\$	11	\$	132	\$	6.72	\$	0.61	\$	7.33	
September '13	54	\$	133	\$	31	\$	164	\$	2.46	\$	0.57	\$	3.04	
October '13	615	\$	219	\$	348	\$	567	\$	0.36	\$	0.57	\$	0.92	
November '13	3,961	\$	2,505	\$	2,220	\$	4,725	\$	0.63	\$	0.56	\$	1.19	
December '13	14,196	\$	4,798	\$	8,193	\$	12,991	\$	0.34	\$	0.58	\$	0.92	
January '14	12,513	\$	4,505	\$	8,136	\$	12,641	\$	0.36	\$	0.65	\$	1.01	
February '14	20,115	\$	6,188	\$	15,364	\$	21,552	\$	0.31	\$	0.76	\$	1.07	
March '14	14,616	\$	5,029	\$	11,120	\$	16,149	\$	0.34	\$	0.76	\$	1.10	
April "14	7,846	\$	895	\$	5,513	\$	6,408	\$	0.11	\$	0.70	\$	0.82	
May '14	1,152	\$	273	\$	805	\$	1,078	\$	0.24	\$	0.70	\$	0.94	
June '14	525	\$	194	\$	364	\$	558	\$	0.37	\$	0.69	\$	1.06	
Total (12 - Month)	75,621					\$	76,987.00					\$	1.018	

4-Mo Average 1,162 Therms DHW 13,944 Therms

HHW 61,677 Therms

Meter No.: 3216985

Natural Gas Service

Delivery -PSE&GSupplier -PSE&G

		Charges							Unit Costs						
Month	Consumption (Therms)	D	elivery (\$)		Supply (\$)		Total (\$)	elivery / I herm)		Supply (Therm)	(\$	Total (Therm)			
July '13	1	\$	104	\$	1	\$	105	\$ 104.00	\$	1.00	\$	105.00			
August '13	17	\$	17	\$	10	\$	27	\$ 1.00	\$	0.59	\$	1.59			
September '14	53	\$	29	\$	30	\$	59	\$ 0.55	\$	0.57	\$	1.11			
October '13	84	\$	40	\$	47	\$	87	\$ 0.48	\$	0.56	\$	1.04			
November '13	74	\$	40	\$	41	\$	81	\$ 0.54	\$	0.55	\$	1.09			
December '13	76	\$	40	\$	44	\$	84	\$ 0.53	\$	0.58	\$	1.11			
January '14	60	\$	34	\$	39	\$	73	\$ 0.57	\$	0.65	\$	1.22			
February '14	102	\$	50	\$	78	\$	128	\$ 0.49	\$	0.76	\$	1.25			
March '14	104	\$	51	\$	79	\$	130	\$ 0.49	\$	0.76	\$	1.25			
April "14	112	\$	46	\$	79	\$	125	\$ 0.41	\$	0.71	\$	1.12			
May '14	95	\$	41	\$	66	\$	107	\$ 0.43	\$	0.69	\$	1.13			
June '14	95	\$	40	\$	66	\$	106	\$ 0.42	\$	0.69	\$	1.12			
Total (12 - Month)	873					\$	1,112.00				\$	1.274			

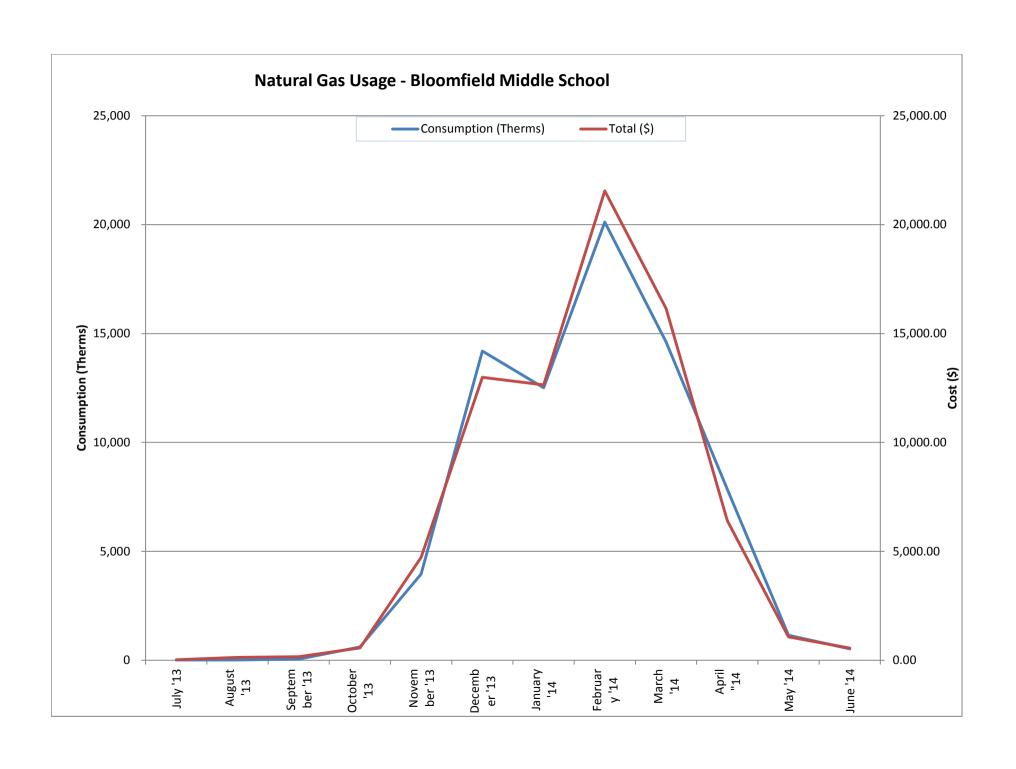
Meter No.: 1866271

Natural Gas Service

Delivery -PSE&GSupplier -PSE&G

		Charges						Unit Costs					
Month	Consumption (Therms)	De	elivery (\$)	,	Supply (\$)		Total (\$)	elivery /Therm)		Supply Therm)	(\$	Total /Therm)	
July '13	1	\$	104	\$	1	\$	105	\$ 104.00	\$	1.00	\$	105.00	
August '13	1	\$	104	\$	1	\$	105	\$ 104.00	\$	1.00	\$	105.00	
September '13	1	\$	104	\$	1	\$	105	\$ 104.00	\$	1.00	\$	105.00	

October '13	531	\$ 179	\$ 301	\$ 480	\$ 0.34	\$ 0.57	\$ 0.90
November '13	3,887	\$ 2,465	\$ 2,179	\$ 4,644	\$ 0.63	\$ 0.56	\$ 1.19
December '13	14,120	\$ 4,758	\$ 8,149	\$ 12,907	\$ 0.34	\$ 0.58	\$ 0.91
January '14	12,453	\$ 4,471	\$ 8,097	\$ 12,568	\$ 0.36	\$ 0.65	\$ 1.01
February '14	20,013	\$ 6,138	\$ 15,286	\$ 21,424	\$ 0.31	\$ 0.76	\$ 1.07
March '14	14,512	\$ 4,978	\$ 11,041	\$ 16,019	\$ 0.34	\$ 0.76	\$ 1.10
April '14	7,734	\$ 849	\$ 5,434	\$ 6,283	\$ 0.11	\$ 0.70	\$ 0.81
May '14	1,057	\$ 232	\$ 739	\$ 971	\$ 0.22	\$ 0.70	\$ 0.92
June '14	430	\$ 154	\$ 298	\$ 452	\$ 0.36	\$ 0.69	\$ 1.05
Total (12 - Month)	74,740			\$ 76,063.00			\$ 1.018



PSE&G GAS SERVICE TERRITORY Last Updated: 12/11/14

$*\underline{CUSTOMER\ CLASS} - R - RESIDENTIAL\ C - COMMERCIAL\ I - INDUSTRIAL$

Supplier	Telephone & Web Site	*Customer Class
Ambit Northeast, LLC d/b/a Ambit Energy 103 Carnegie Center Suite 300	877-282-6284	R/C ACTIVE
Princeton, NJ 08540	www.ambitenergy.com	
Amerigreen Energy, Inc. 333 Sylvan Avenue Suite 206 Englewood Cliffs, NJ 07632	(888)559-4567 www.amerigreen.com	R/C/I ACTIVE
,	888-850-1872	R/C/I
Astral Energy LLC 16 Tyson Place Bergenfield, NJ 07621	www.AstralEnergyLLC.com	ACTIVE
BBPC, LLC Great Eastern	888-651-4121	С
Energy 116 Village Blvd. Suite 200 Princeton, NJ 08540	www.greateasternenergy.com	ACTIVE
Choice Energy, LLC 4257 US Highway 9, Suite 6C Freehold, NJ 07728	(888) 565-4490	R/C/I
	www.4choiceenergy.com	
Clearview Electric Inc. d/b/a Clearview Gas 1744 Lexington Ave.	800-746-4720	R/C
Pennsauken, NJ 08110	www.clearviewenergy.com	ACTIVE
Colonial Energy, Inc. 83 Harding Road	845-429-3229	C/I
Wyckoff, NJ 07481	www.colonialgroupinc.com	ACTIVE
Commerce Energy, Inc. 7 Cedar Terrace	888 817-8572	R
Ramsey, NJ 07746	www.commerceenergy.com	ACTIVE
Compass Energy Services, Inc. 33 Wood Avenue South, 610	866-867-8328	C/I
Iselin, NJ 08830	www.compassenergy.net	ACTIVE

Compass Energy Gas Services,	866-867-8328	C/I
LLC	800-807-8328	C/I
33 Wood Avenue South		
Suite 610	vvvvv oomnossononov not	ACTIVE
	www.compassenergy.net	ACTIVE
Iselin, NJ 08830		
ConocoPhillips Company	800-646-4427	C/I
224 Strawbridge Drive, Suite		
107	www.conocophillips.com	ACTIVE
Moorestown, NJ 08057		
Consolidated Edison Energy,	888-686-1383 x2130	
Inc.		
d/b/a Con Edison Solutions		
535 State Highway 38, Suite	www.conedenergy.com	
140		
Cherry Hill, NJ 08002		
Consolidated Edison	888-665-0955	C/I
	000-003-0733	C/I
Solutions, Inc.		
Cherry Tree Corporate Center	1.1.2	ACTIVE
535 State Highway 38, Suite	www.conedsolutions.com	
140		
Cherry Hill, NJ 08002		
Constellation NewEnergy-Gas	800-785-4373	C/I
Division, LLC		
116 Village Boulevard, Suite		
200	www.constellation.com	ACTIVE
Princeton, NJ 08540		
Constellation Energy Gas	800-785-4373	R/C/I
Choice, Inc.		
116 Village Blvd., Suite 200	www.constellation.com	ACTIVE
Princeton, NJ 08540		
Direct Energy Business, LLC	888-925-9115	R
120 Wood Avenue, Suite 611		
Iselin, NJ 08830	http://www.business.directenergy.com/	ACTIVE
Direct Energy Business	(800) 437-7872	C/I
Marketing, LLC (fka Hess	(000) +31-1012	C/1
Energy Marketing)		
One Hess Plaza		
	http://www.business directonersy.com/	ACTIVE
Woodbridge, NJ 07095	http://www.business.directenergy.com/	
Direct Energy Services, LLC	(888) 925-9115	R
120 Wood Avenue, Suite 611		
Iselin, NJ 08830	www.directenergy.com	ACTIVE

Direct Energy Small Business, LLC (fka Hess Small Business Services, LLC) One Hess Plaza	(888) 464-4377	С/І
Woodbridge, NJ 07095	http://www.business.directenergy.com/	ACTIVE
Gateway Energy Services	(866) 348-4193	R/C
Corp. 120 Wood Avenue Suite 611 Iselin, NJ 08830	www.gesc.com	ACTIVE
Glacial Energy of New Jersey,	888-452-2425	C/I
Inc. 21 Pine Street, Suite 237 Rockaway, NJ 07866	www.glacialenergy.com	ACTIVE
Global Energy Marketing,	800-542-0778	C/I
LLC 129 Wentz Avenue Springfield, NJ 07081	www.globalp.com	ACTIVE
Great Eastern Energy	888-651-4121	C/I
116 Village Blvd., Suite 200 Princeton, NJ 08540	www.greateastern.com	ACTIVE
Greenlight Energy	718-204-7467	C
330 Hudson Street, Suite 4 Hoboken, NJ 07030	www.greenlightenergy.us	ACTIVE
Harborside Energy LLC	877-940-3835	R/C
101 Hudson Street, Suite 2100 Jersey City, NJ 07302	www.harborsideenergynj.com	ACTIVE
Hess Energy, Inc.	800-437-7872	C/I
One Hess Plaza Woodbridge, NJ 07095	www.hess.com	ACTIVE
HIKO Energy, LLC	888 264-4908	R/C/I
655 Suffern Road Teaneck, NJ 07666	www.hikoenergy.com	ACTIVE
Hudson Energy Services, LLC	877- Hudson 9	C
7 Cedar Street Ramsey, NJ 07446	www.hudsonenergyservices.com	ACTIVE
IDT Energy, Inc.	877-887-6866	R/C
550 Broad Street Newark, NJ 07102	www.idtenergy.com	ACTIVE

Infinite Engage dhe Intelligent	(800) 927-9794	R/C/I
Infinite Energy dba Intelligent	(800) 921-9794	R/C/I
Energy 1200 Route 22 East Suite 2000		
	InCinitaFarana	A COTING
Bridgewater, NJ 08807-2943	www.InfiniteEnergy.com	ACTIVE
Integrys Energy Services-	(800) 536-0151	C/I
Natural Gas, LLC		
101 Eisenhower Parkway		
Suite 300	www.integrysenergy.com	ACTIVE
Roseland, NJ 07068		
Jsynergy LLC	(516) 331-2020	R/C/I
445 Cental Ave. Suite 204	(610) 661 2020	
Cedarhurst, NY 11516	www.Jsnergyllc.com	ACTIVE
Major Energy Services, LLC	888-625-6760	R/C/I
1001 East Lawn Drive		. ~
Teaneck NJ 07666	www.majorenergy.com	ACTIVE
Manadhan Danna II C	888-779-7255	D/C/I
Marathon Power LLC	888-119-1255	R/C/I
302 Main Street		A COUNTY
Paterson, NJ 07505	www.mecny.com	ACTIVE
Metromedia Energy, Inc.	1-877-750-7046	C/I
6 Industrial Way		
Eatontown, NJ 07724	www.metromediaenergy.com	ACTIVE
,		
Metro Energy Group, LLC	888-53-Metro	R/C
14 Washington Place		
Hackensack, NJ 07601	www.metroenergy.com	ACTIVE
MPower Energy NJ LLC	877-286-7693	R/C/I
	877-280-7093	IN/C/I
One University Plaza, Suite 507		ACTIVE
Hackensack, NJ 07601	www.mpowerenergy.com	ACTIVE
NATGASCO (Supreme	800-840-4427	R/C/I
Energy, Inc.)		
532 Freeman Street		
Orange, NJ 07050	www.supremeenergyinc.com	ACTIVE
New Energy Services LLC	800-660-3643	R/C/I
101 Neptune Avenue	000 000-30+3	1001
Deal, New Jersey 07723	www.newenergyservicesllc.com	ACTIVE
Deal, New Jersey 07723	www.newenergyservicesne.com	ACTIVE
New Jersey Gas & Electric	866-568-0290	R/C
10 North Park Place		
Suite 420		
Morristown, NJ 07960	www.njgande.com	ACTIVE

Noble Americas Energy	877-273-6772	C/I
Solutions	011-213-0112	C/1
The Mac-Cali Building		
581 Main Street, 8th fl.	www.noblesolutions.com	ACTIVE
Woodbridge, NJ 07095		
North American Power &	888- 313-8086	R/C/I
Gas, LLC d/b/a North		
American Power		
197 Route 18 South Ste. 300	www.napower.com	ACTIVE
New Brunswick, NJ 08816		
,	(999) 525 6240	R/C/I
North Eastern States, Inc.	(888) 535-6340	R/C/I
d/b/a Entrust Energy		
90 Washington Valley Road		A COPYLIE
Bedminster, NJ 07921	www.entrustenergy.com	ACTIVE
Oasis Power, LLC d/b/a Oasis	(800)324-3046	R/C
Energy		
11152 Westheimer, Suite 901	www.oasisenergy.com	ACTIVE
Houston, TX 77042		
Palmco Energy NJ, LLC	877-726-5862	R/C/I
One Greentree Centre	377 720 3002	1001
10,000 Lincoln Drive East, Suite		
201	www.PalmcoEnergy.com	ACTIVE
Marlton, NJ 08053	www.ranneoEnergy.com	ACTIVE
·	055 22 POWED (5005)	D/C/T
Plymouth Rock Energy, LLC	855-32-POWER (76937)	R/C/I
338 Maitland Avenue		
Teaneck, NJ 07666	www.plymouthenergy.com	ACTIVE
PPL EnergyPlus, LLC	(732) 741-0505	C/I
Shrewsbury Executive Offices	(.52)	
788 Shrewsbury Avenue		
Suite 2200		
Tinton Falls, NJ 07724	www.pplenergyplus.com	ACTIVE
,		
PPL EnergyPlus Retail, LLC	(732) 741-0505 – 2000	C/I
Shrewsbury Executive Offices		
788 Shrewsbury Avenue, Suite		
	www.pplenergyplus.com	ACTIVE
Tinton Falls, NJ 07724		
Public Power & Utility of New	(888) 354-4415	R/C/I
Jersey, LLC		
400	www.ppandu.com	ACTIVE
		-
220 Tinton Falls, NJ 07724 Public Power & Utility of New Jersey, LLC One International Blvd, Suite	www.pplenergyplus.com (888) 354-4415 www.ppandu.com	

Residents Energy, LLC 550 Broad Street	(888) 828-7374	R/C
Newark, NJ 07102	www.residentsenergy.com	
Respond Power LLC 1001 East Lawn Drive	(877) 973-7763	R/C/I
Teaneck, NJ 07666	www.respondpower.com	ACTIVE
Save on Energy, LLC 1101 Red Ventures Drive	1 (877) 658-3183	R/C
Fort Mill, SC 29707	www.saveonenergy.com	ACTIVE
SFE Energy	1 (877) 316-6344	R/C/I
One Gateway Center Suite 2600 Newark, NJ 07012	www.sfeenergy.com	ACTIVE
S.J. Energy Partners, Inc.	(800) 695-0666	С
208 White Horse Pike, Suite 4 Barrington, NJ 08007	www.sjnaturalgas.com	ACTIVE
South Jersey Energy	800-266-6020	R/C/I
Company 1 South Jersey Plaza, Route 54 Folsom, NJ 08037	www.southjerseyenergy.com	ACTIVE
SouthStar Energy d/b/a New	(866) 477-8823	R/C
Jersey Energy 1085 Morris Avenue, Suite 155 Union, NJ 07083	www.newjerseyenergy.com	ACTIVE
Spark Energy Gas, LP/ Spark	(713)600-2600	R/C/I
Energy 2105 City West Blvd. Suite 100		
Houston, TX 77042	www.sparkenergy.com	ACTIVE
Sperian Energy Corp. Bridgewater Center	888-682-8082	R/C/I
1200 Route 22 East Bridgewater, NJ 08807	www.sperianenergy.com	ACTIVE
Sprague Energy Corp.	855-466-2842	C/I
12 Ridge Road Chatham Township, NJ 07928	www.spragueenergy.com	ACTIVE
Stuyvesant Energy LLC	800-640-6457	C
10 West Ivy Lane, Suite 4 Englewood, NJ 07631	www.stuyfuel.com	ACTIVE

Stream Energy New Jersey,	(877) 369-8150	R/C
LLC		
309 Fellowship Road		
Suite 200		
Mt. Laurel, NJ 08054	<u>www.streamenergy.net</u>	ACTIVE
Summit Energy Services, Inc.	1 (800) 90-SUMMIT	C/I
10350 Ormsby Park Place		
Suite 400 Louisville, KY 40223	www.summitenergy.com	ACTIVE
,	077 707 0707	D/C/I
Systrum Energy	877-797-8786	R/C/I
1 Bergen Blvd. Fairview, NJ 07022	www.systrumenergy.com	ACTIVE
Tiger Natural Gas, Inc. dba	888-875-6122	R/C/I
Tiger, Inc. 234 20th Avenue		
Brick, NJ 008724	www.tigernaturalgas.com	ACTIVE
UGI Energy Services, Inc.	800-427-8545	C/I
dba UGI Energy Link	800-427-8343	C/1
224 Strawbridge Drive, Suite	www.ugienergylink.com	ACTIVE
107	www.agienergymik.com	1101112
Moorestown, NJ 08057		
UGI Energy Services, Inc.	856-273-9995	C/I
d/b/a GASMARK		
224 Strawbridge Drive, Suite		
107	www.ugienergylink.com	ACTIVE
II.		1101112
Moorestown, NJ 08057		1101112
Verde Energy USA, Inc.	800-388-3862	R/C
Verde Energy USA, Inc. 2001 Route 46		
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301	800-388-3862	R/C
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054	800-388-3862 www.lowcostpower.com	R/C ACTIVE
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC	800-388-3862	R/C
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview	800-388-3862 www.lowcostpower.com	R/C ACTIVE
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230	800-388-3862 www.lowcostpower.com 866-663-2508	R/C ACTIVE R/C
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com	R/C ACTIVE R/C ACTIVE
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P.	800-388-3862 www.lowcostpower.com 866-663-2508	R/C ACTIVE R/C
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P. 197 State Route 18 South, Suite	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com	R/C ACTIVE R/C ACTIVE
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P. 197 State Route 18 South, Suite 3000	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com	R/C ACTIVE R/C ACTIVE
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P. 197 State Route 18 South, Suite 3000 South Wing	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com 888-508-4782	R/C ACTIVE R/C ACTIVE R/C/I
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P. 197 State Route 18 South, Suite 3000 South Wing East Brunswick, NJ 08816	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com 888-508-4782 www.vistaenergymarketing.com	R/C ACTIVE R/C ACTIVE ACTIVE ACTIVE
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P. 197 State Route 18 South, Suite 3000 South Wing East Brunswick, NJ 08816 Woodruff Energy	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com 888-508-4782	R/C ACTIVE R/C ACTIVE R/C/I
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054 Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054 Vista Energy Marketing, L.P. 197 State Route 18 South, Suite 3000 South Wing East Brunswick, NJ 08816	800-388-3862 www.lowcostpower.com 866-663-2508 www.viridian.com 888-508-4782 www.vistaenergymarketing.com	R/C ACTIVE R/C ACTIVE ACTIVE 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. 16th Floor 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

Back to main supplier information page

PSE&G ELECTRIC SERVICE TERRITORY Last Updated: 12/11/14

$*\underline{CUSTOMER\ CLASS} - R - RESIDENTIAL\ C - COMMERCIAL\ I - INDUSTRIAL$

Supplier	Telephone	*Customer
Supplier	& Web Site	Class
Abest Power & Gas of NJ,	(888)987-6937	R/C/I
LLC	(000)/201 0321	14 0/1
202 Smith Street		
Perth Amboy, NJ 08861	www.AbestPower.com	ACTIVE
AEP Energy, Inc. f/k/a	(866) 258-3782	R/C/I
BlueStar Energy Services		
309 Fellowship Road, Fl. 2	www.aepenergy.com	ACTIVE
Mount Laurel, NJ 08054		
Alpha Gas and Electric,	(855) 553-6374	R/C
LLC		
641 5 th Street	www.alphagasandelectric.com	ACTIVE
Lakewood, NJ 08701		
Ambit Northeast, LLC d/b/a	877-282-6284	R/C
Ambit Energy		
103 Carnegie Center Suite 300		ACTIVE
Princeton, NJ 08540	www.ambitenergy.com	ACTIVE
American Powernet	(877) 977-2636	C/I
Management, LP	(877) 977-2030	C/1
437 North Grove St.	www.americanpowernet.com	
Berlin, NJ 08009	www.americanpowernec.com	ACTIVE
Amerigreen Energy, Inc.	888-559-4567	R/C
333Sylvan Avenue		
Englewood Cliffs, NJ 07632	www.amerigreen.com	ACTIVE
AP Gas & Electric, (NJ)	(855) 544-4895	R/C/I
LLC		
10 North Park Place, Suite 420	www.apgellc.com	ACTIVE
Morristown, NJ 07960		
Astral Energy LLC	(888)850-1872	R/C/I
16 Tyson Place		
Bergenfield, NJ 07621	www.AstralEnergyLLC.com	ACTIVE
Barclays Capital Services,	(800) 526-7000	C
Inc.		
70 Hudson Street	, ,	ACTIVE
Jersey City, NJ 07302-4585	www.barclays.com	
BBPC, LLC d/b/a Great	(888) 651-4121	C
Eastern Energy		

116 Village Blvd. Suite 200		
Princeton, NJ 08540		ACTIVE
	<u>www.greateasternenergy.com</u>	
Berkshire Energy Partners,	(610) 255-5070	C/I
LLC		A CONTAIN
9 Berkshire Road		ACTIVE
Landenberg, PA 19350	vvvvvv houleshimoon anavymoutu one oom	
Attn: Dana A. LeSage, P.E.	www.berkshireenergypartners.com	D/C
Blue Pilot Energy, LLC 197 State Rte. 18 South	(800) 451-6356	R/C
Ste. 3000		
East Brunswick, NJ 08816	www.bluepilotenergy.com	ACTIVE
Brick Standard, LLC	(201)706-8101	C/I
235 Hudson Street Suite 1	(201)/00-8101	C/1
Hoboken, NJ 07030	www.standardalternative.com	ACTIVE
CCES LLC dba Clean	(877) 933-2453	R/C
Currents Energy Services	(811) 933-2433	N/C
566 Terhune Street		
Teaneck, NJ 07666	www.cleancurrents.com	ACTIVE
Champion Energy Services,	(888) 653-0093	R/C/I
LLC	(000) 000 0000	
1200 Route 22		ACTIVE
Bridgewater, NJ 08807	www.championenergyservices.com	
Choice Energy, LLC	(888) 565-4490	R/C
4257 US Highway 9, Suite 6C		
Freehold, NJ 07728	www.4choiceenergy.com	ACTIVE
Clearview Electric, Inc.	(888) CLR-VIEW	R/C/I
1744 Lexington Avenue	(800) 746- 4702	
Pennsauken, NJ 08110	www.clearviewenergy.com	ACTIVE
Commono Engaga Inc	1-866-587-8674	D/C
Commerce Energy, Inc. 7 Cedar Terrace	1-000-367-6074	R/C
Ramsey, NJ 07446	www.commerceenergy.com	ACTIVE
<u> </u>		
Community Energy Inc. 51 Sandbrook Headquarters	(866)946-3123	R/C/I
Road		
Stockton, NJ 08559	www.communityenergyinc.com	ACTIVE
ConEdison Solutions	(888) 665-0955	C/I
Cherry Tree Corporate Center	(000, 000 0)25	
535 State Highway		
Suite 180		ACTIVE
Cherry Hill, NJ 08002	www.conedsolutions.com	

ConocoPhillips Company	(800) 646-4427	C/I
224 Strawbridge Drive	(600) 616 1127	
Suite 107		ACTIVE
Moorestown, NJ 08057	www.conocophillips.com	
Constellation NewEnergy,	(888) 635-0827	R/C/I
Inc.	(000) 033 0021	N/C/1
900A Lake Street, Suite 2	www.constellation.com	ACTIVE
Ramsey, NJ 07446	www.constenation.com	11011,2
Constellation Energy	(877) 997-9995	R
900A Lake Street, Suite 2	(811) 331-3333	I A
Ramsey, NJ 07446	www.constellation.com	ACTIVE
Ramsey, NJ 07440	www.constenation.com	ACTIVE
Credit Suisse, (USA) Inc.	(212) 538-3124	C
700 College Road East		
Princeton, NJ 08450	www.creditsuisse.com	ACTIVE
Direct Energy Business, LLC	(888) 925-9115	R
120 Wood Avenue, Suite 611		
Iselin, NJ 08830	http://www.business.directenergy.com/	ACTIVE
Direct Energy Business	(800) 437-7872	C/I
Marketing, LLC (fka Hess	(800) 437-7872	C/1
Energy Marketing)		
1 Hess Plaza		
Woodbridge, NJ 07095	http://www.business.directenergy.com/	ACTIVE
Direct Energy Services, LLC	(888) 925-9115	R
120 Wood Avenue, Suite 611	(000) 723-7113	ı K
Iselin, NJ 08830	www.directenergy.com	ACTIVE
,		
Direct Energy Small	(888) 464-4377	C/I
Business, LLC (fka Hess		
Small Business Services,		
LLC) One Hess Plaza		
	http://www.business.directenergy.com/	ACTIVE
Woodbridge, NJ 07095		
Discount Energy Group,	(800) 282-3331	R/C
LLC		
811 Church Road, Suite 149		ACCIDITATE
Cherry Hill, New Jersey	www.diacountonanaranananananana	ACTIVE
08002	www.discountenergygroup.com	
DTE Energy Supply, Inc.	(877) 332-2450	C/I
One Gateway Center,		A COUNTY
Suite 2600	1, 1	ACTIVE
Newark, NJ 07102	www.dtesupply.com	

Energy.me Midwest LLC	(855) 243-7270	R/C/I
90 Washington Blvd	, , ,	
Bedminster, NJ 07921	www.energy.me	ACTIVE
Energy Plus Holdings LLC	(877) 866-9193	R/C
309 Fellowship Road		
East Gate Center, Suite 200		A CURINUE
Mt. Laurel, NJ 08054	www.energypluscompany.com	ACTIVE
Ethical Electric Benefit Co.	(888) 444-9452	R/C
d/b/a Ethical Electric		
100 Overlook Center, 2 nd Fl. Princeton, NJ 08540	www.ethicalelectric.com	ACTIVE
		R/C
Energy Service Providers, Inc., d/b/a New Jersey Gas &	(866) 568-0290	R/C
Electric		
1 Bridge Plaza fl. 2		
Fort Lee, NJ 07024	www.njgande.com	ACTIVE
FirstEnergy Solutions	(866) 625-7318	C/I
150 West State Street	_	
Trenton, NJ 08608	www.fes.com	ACTIVE
Gateway Energy Services	(866)348-4193	R/C
Corp.		
120 Wood Avenue Suite 611 Iselin, NJ 08830	www.directenergybusiness.com	ACTIVE
GDF SUEZ Energy	(866) 999-8374	C/I
Resources NA, Inc. 333 Thornall Street		
Sixth Floor		
Edison, NJ 08837	www.gdfsuezenergyresources.com	ACTIVE
GDF Suez Retail Energy	1-866-252-0078	R/C/I
Solutions LLC d/b/a THINK		
ENERGY		
333 Thornall St. Sixth Floor	www.mythinkenergy.com	ACTIVE
Edison, NJ 08819	(200) 455 2 155	
Glacial Energy of New	(888) 452-2425	C/I
Jersey, Inc. 21 Pine Street, Suite 237		
Rockaway, NJ 07866	www.glacialenergy.com	ACTIVE
Global Energy Marketing LLC	(800) 542-0778	R/C/I
129 Wentz Avenue		ACTIVE
Springfield, NJ 07081	www.globalp.com	
<u>.</u> .	<u> </u>	

Green Mountain Energy	(866) 767-5818	C/I
Company 211 Carnegie Center Drive	www.greenmountain.com/commercial-	
Princeton, NJ 08540	home	ACTIVE
Harborside Energy LLC	(877) 940-3835	R/C
101 Hudson Street	(011) 540 3033	II.
Suite 2100		
Jersey City, NJ 07302	www.harborsideenergynj.com	ACTIVE
Hess Corporation	(800) 437-7872	C/I
1 Hess Plaza Woodbridge, NJ 07095	www.hess.com	ACTIVE
HIKO Energy, LLC	(888) 264-4908	R/C/I
655 Suffern Road Teaneck, NJ 07666	www.hikoenergy.com	ACTIVE
Hudson Energy Services, LLC	(877) Hudson 9	C
7 Cedar Street		
Ramsey, New Jersey 07446	www.hudsonenergyservices.com	ACTIVE
IDT Energy, Inc.	(877) 887-6866	R/C
550 Broad Street		A CONT. 15
Newark, NJ 07102	www.idtenergy.com	ACTIVE
Independence Energy	(877) 235-6708	R/C
Group, LLC 211 Carnegie Center		ACTIVE
Princeton, NJ 08540	www.chooseindependence.com	ACTIVE
Inspire Energy Holdings	(866) 403-2620	R/C/I
LLC	(000) 100 2020	14 6/1
923 Haddonfield Road		
3rd Fl. Building B2	www.inspireenergy.com	
Cherry Hill, NJ 08002	(800) 536-0151	C/I
Integrys Energy Services, Inc.	(000) 330-0131	C/I
33 Wood Ave, South, Suite		
610		ACTIVE
Iselin, NJ 08830	www.integrysenergy.com	
Jsynergy, LLC 445 Central Ave. Suite 204	(516) 331-2020	R/C/I
Cedarhurst, NY 11516	Jsynergyllc.com	ACTIVE
Kuehne Chemical Company,	(973) 589-0700	I
Inc.	(575) 507 0700	
86 North Hackensack Avenue		
South Kearney, NJ 07032	kuehnechemical@comcast.net	

Liberty Power Delaware,	(866) 769-3799	C/I
LLC 1973 Highway 34, Suite 211 Wall, NJ 07719	www.libertypowercorp.com	ACTIVE
Liberty Power Holdings,	(866) 769-3799	R/C/I
LLC 1973 Highway 34, Suite 211 Wall, NJ 07719	www.libertypowercorp.com	ACTIVE
Linde Energy Services	(800) 247-2644	C/I
575 Mountain Avenue Murray Hill, NJ 07974	www.linde.com	ACTIVE
Marathon Power LLC	(888) 779-7255	R/C/I
302 Main Street Paterson, NJ 07505	www.mecny.com	ACTIVE
MP2 Energy NJ, LLC	(877) 238-5343	R/C/I
111 River Street, Suite 1204 Hoboken, NJ 07030	www.mp2energy.com	ACTIVE
Natures Current, LLC	(215) 464-6000	R/C/I
95 Fairmount Avenue Philadelphia, Pennsylvania		ACTIVE
19123	www.naturescurrent.com	
MPower Energy NJ LLC	(877) 286-7693	R/C/I
One University Plaza, Suite 507 Hackensack, NJ 07601	www.mpowerenergy.com	ACTIVE
NATGASCO, Inc. (Supreme	(800) 840-4427	R/C/I
Energy, Inc.) 532 Freeman St. Orange, NJ 07050	www.supremeenergyinc.com	ACTIVE
New Jersey Gas & Electric	(866) 568-0290	R/C/
10 North Park Place Suite 420		A COPY II
Morristown, NJ 07960	www.njgande.com	ACTIVE
NextEra Energy Services New Jersey, LLC 651 Jernee Mill Road	(877) 528-2890 Commercial (800) 882-1276 Residential	R/C/I
Sayreville, NJ 08872	www.nexteraenergyservices.com	ACTIVE
Noble Americas Energy	(877) 273-6772	C/I
Solutions The Mac-Cali Building 581 Main Street, 8th Floor Woodbridge, NJ 07095	www.noblesolutions.com	ACTIVE

Nordic Energy Services,	(877) 808-1027	R/C/I
LLC 50 Tice Boulevard, Suite 340	www.nordiceenergy.us.com	ACTIVE
Woodcliff Lake, NJ 07677	(999) 212 0096	D/C/I
North American Power and Gas, LLC	(888) 313-9086	R/C/I
222 Ridgedale Avenue		
Cedar Knolls, NJ 07927	www.napower.com	ACTIVE
North Eastern States, Inc.	(888) 535-6340	R/C/I
d/b/a Entrust Energy		
90 Washington Valley Road Bedminster, NJ 07921	www.entrustenergy.com	ACTIVE
,		
Oasis Power, LLC d/b/a Oasis Energy	(800)324-3046	R/C
11152 Westheimer, Suite 901		ACTIVE
Houston, TX 77042	www.oasisenergy.com	
Palmco Power NJ, LLC	(877) 726-5862	R/C/I
One Greentree Centre		
10,000 Lincoln Drive East, Suite 201		
Marlton, NJ 08053	www.PalmcoEnergy.com	ACTIVE
Park Power, LLC	(856) 778-0079	R/C/I
1200 South Church St.	, ,	
Suite 23		A COMPANY
Mount Laurel, NJ 08054	www.parkpower.com	ACTIVE
Plymouth Rock Energy, LLC	(855) 32-POWER (76937)	R/C/I
338 Maitland Avenue	www.plymouthenergy.com	ACTIVE
Teaneck, NJ 07666		
Power Management Co.,	(585) 249-1360	C/I
LLC b/b/a PMC Lightsavers		
Limited Liability Company 1600 Moseley Road		
Victor, NY 14564	www.powermanagementco.com	ACTIVE
PPL Energy Plus, LLC	(800) 281-2000	C/I
811 Church Road	www.pplanagavalva.aam	A CONTRACT
Cherry Hill, NJ 08002	www.pplenergyplus.com	ACTIVE
PPL EnergyPlus Retail, LLC 788 Shrewsbury Avenue, Suite	(732) 741-0505 – 2000	C/I
220		ACTIVE
Tinton Falls, NJ 07724	www.pplenergyplus.com	
Progressive Energy	(917) 837-7400	R/C/I
Consulting, LLC		

PO Box 4582	Progressivenrg@optionline.net	ACTIVE
Wayne, New Jersey 07474 Prospect Resources, Inc.	(847) 673-1959	С
208 W. State Street	(0.1.) 0.10 0.50	
Trenton, NJ 08608-1002	www.prospectresources.com	ACTIVE
Public Power & Utility of	(888) 354-4415	R/C/I
New Jersey, LLC		
One International Blvd, Suite 400	www.ppandu.com	ACTIVE
Mahwah, NJ 07495	www.ppandu.com	ACTIVE
Reliant Energy	(877) 297-3795	R/C/I
211 Carnegie Center	(877) 297-3780	
Princeton, NJ 08540	www.reliant.com	ACTIVE
ResCom Energy LLC	(888) 238-4041	R/C/I
18C Wave Crest Ave.		
Winfield Park, NJ 07036	http://rescomenergy.com	ACTIVE
Residents Energy, LLC	(888) 828-7374	R/C
550 Broad Street		
Newark, NJ 07102	www.residentsenergy.com	
Respond Power LLC	(877) 973-7763	R/C/I
1001 East Lawn Drive		
Teaneck, NJ 07666	www.majorenergy.com	ACTIVE
Save on Energy, LLC	1 (877)-658-3183	R/C
1101 Red Ventures Drive		
Fort Mill, SC 29707	www.saveonenergy.com	
SFE Energy	1 (877) 316-6344	R/C/I
One Gateway Center		
Suite 2600	www.sfeenergy.com	ACTIVE
Newark, NJ 07012 S.J. Energy Partners, Inc.	(200) 505 0556	C
208 White Horse Pike, Suite 4	(800) 695-0666	
Barrington, NJ 08007	www.sjnaturalgas.com	ACTIVE
SmartEnergy Holdings, LLC	(800) 443-4440	R/C/I
100 Overlook Center	(555) 1.5	
2nd Floor		
Princeton, NJ NJ 08540		
United States of America	www.smartenergy.com	ACTIVE
South Jersey Energy	(800) 266-6020	R/C/I
Company 1 South Jersey Plaza, Route 54		ACTIVE
Folsom, NJ 08037	www.southjerseyenergy.com	ACIIVE
1 015011, 1 15 00007	www.soddijotseyenergy.com	

Spark Energy Gas, LP/ Spark Energy	(713)600-2600	R/C/I
2105 City West Blvd.		
Suite 100		
Houston, TX 77042	www.sparkenergy.com	ACTIVE
Sperian Energy Corp.	(888) 682-8082	R/C/I
1200 Route 22 East, Suite		A CURINA
2000 Bridgewater, NJ 08807	www.sperianenergy.com	ACTIVE
Starion Energy PA Inc.	(800) 600-3040	R/C/I
101 Warburton Avenue	(600) 600-3040	K/C/I
Hawthorne, NJ 07506	www.starionenergy.com	ACTIVE
Stream Energy New Jersey, LLC	(877) 369-8150	R/C
309 Fellowship Rd., Suite 200	www.streamenergy.net	ACTIVE
Mt. Laurel, NJ 08054		11011
Summit Energy Services,	1 (800) 90-SUMMIT	C/I
Inc.		
10350 Ormsby Park Place		
Suite 400 Louisville, KY 40223	www.summitenergy.com	ACTIVE
Texas Retail Energy LLC	(866) 532-0761	C/I
Park 80 West Plaza II, Suite	(800) 332-0701	C/1
200		
Saddle Brook, NJ 07663		ACTIVE
Attn: Chris Hendrix	Texasretailenergy.com	
TransCanada Power	(877) MEGAWAT	C/I
Marketing Ltd.		
190 Middlesex Essex Turnpike, Suite 200		
Iselin, NJ 08830	www.transcanada.com/powermarketing	ACTIVE
TriEagle Energy, LP	(877) 933-2453	R/C/I
90 Washington Valley Rd		
Bedminster, NJ 07921	www.trieagleenergy.com	ACTIVE
UGI Energy Services, Inc.	(800) 427-8545	C/I
dba UGI Energy Link		
224 Strawbridge Drive Suite 107		
Moorestown, NJ 08057	www.ugienergylink.com	ACTIVE
Verde Energy USA, Inc.	(800) 388-3862	R/C
2001 Route 46	(223,230 5002	
Waterview Plaza Suite 301		
Parsippany, NJ 07054	www.lowcostpower.com	ACTIVE

Viridian Energy	(866) 663-2508	R/C/I
2001 Route 46, Waterview		
Plaza		
Suite 310		
Parsippany, NJ 07054	www.viridian.com	ACTIVE
XOOM Energy New Jersey,	(888) 997-8979	R/C/I
LLC		
744 Broad Street. 16 th Floor		
Newark, NJ 07102	www.xoomenergy.com	ACTIVE
YEP Energy	(855) 363-7736	R/C/I
89 Headquarters Plaza North		
#1463		
Morristown, NJ 07960	www.yepenergyNJ.com	ACTIVE
Your Energy Holdings, LLC	(855) 732-2493	R/C/I
One International Boulevard		
Suite 400		
Mahwah, NJ 07495-0400	www.thisisyourenergy.com	ACTIVE

Back to the main supplier page



CHA Project # 30040 Bloomfield Middle School 60 Huck Road Bloomfield, NJ 07003

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. Current year	Years Old	ASHRAE life expectancy
Boilers	2	Superior	N/A	N/A	Gas fired hot water boilers	10,500 MBH input each	N/A	Boiler Room in basement	Heating system for whole School	1960	-30	2015	55	25
Heating Hot Water Pumps	4	Bell and Gossett	N/A	N/A	Centrifugal Pump with 5HP electric motor	N/A	N/A	Boiler Room in basement	Heating for whole school except 2000 section	1960	-35	2015	55	20
Heating Hot Water Pumps	2	Armstrong	3X1.5x8 4030	C 415219	Centrifugal Pump with 2 HP electric motor	36 GPM @ 50 Ft. Head	N/A	Boiler Room in basement	Heating for 2000 scetion	2000	5	2015	15	20
Unit Ventilators	14	AAF	N/A	N/A	Unit Ventilator with self contained cooling and hot water heating coil	N/A	N/A	Classrooms in 2000 section	Classrooms	2000	10	2015	15	25
Unit Ventilators	65	N/A	N/A	N/A	Unit Ventilator with hot water heating coil	N/A	N/A	Classrooms	Classrooms	1960	-30	2015	55	25
Heating and Ventilation Unit	4	N/A	N/A	N/A	Heating and Ventilation Unit with hot water heating coil	N/A	N/A	Gymnasium	Gymnasium	1960	-30	2015	55	25
Heating and Ventilation Unit	2	N/A	N/A	N/A	Heating and Ventilation Unit with hot water heating coil	N/A	N/A	Auditorium	Auditorium	1960	-30	2015	55	25
Rooftop Unit	1	Allied Commercial	TCA060S2BN1Y	5607D09928	Rooftop Unit with electric cooling	5 Ton nominal cooling capacity	11.0 EER	Roof	Classroom 112	2007	7	2015	8	15
Rooftop Unit	1	Lennox	CHA16-653-3Y	N/A	Rooftop Unit with electric cooling	53,500 BTU nominal cooling capacity	10.3 EER	Roof	Classroom 113	2007	7	2015	8	15
Rooftop Unit	1	Trane	YCD120C3LAAC	R30101953D	Rooftop Unit with electric cooling and gas heating	10 ton nominal cooling and 135 MBH Input/109.35 MBH Output gas furnace	11.3 EER and 80% gas furnace efficiency	Roof	Library Wing	2000	0	2015	15	15
Rooftop Unit	1	Trane	YCD300B3LAGA	R30102482D	Rooftop Unit with electric cooling and gas heating	25 ton nominal cooling and 250 MBH Input/203 MBH Output gas furnace	9.7 EER and 80% gas furnace efficiency	Roof	Library Wing	2000	0	2015	15	15
Rooftop Unit	1	McQuay	RPS018CSA	FBOU000800280	Rooftop Unit with electric cooling and gas heating	18 ton nominal cooling and 400 MBH Input/320 MBH Output gas furnace	80% gas furnace efficiency	Roof	Science Classrooms 151,153 and 155	2000	0	2015	15	15
DX Split AC Units	5	Arcoaire	CA5548VHD2	N/A	DX Split AC unit with air cooled condensing unit	4 ton nominal cooling capacity	N/A	Roof	Hallways	2000	0	2015	15	15
DX Split AC Units	1	N/A	HBES-T090AB	N/A	DX Split AC unit with air cooled condensing unit	7/12 ton nominal cooling capacity	N/A	Roof	Principal's Office and Main Office	2000	0	2015	15	15
Unit Heater	4	N/A	N/A	N/A	Unit heaters with hot water heating coils	N/A	N/A	Ceiling of Gymnasium	Gymnasium	1960	-35	2015	55	20
Domestic Hot Water Circulating Pump	1	Bell and Gossett	N/A	N/A	Centrifugal Pump with FHP electric motor	N/A	N/A	Boiler Room in basement	Domestic hot water to all spaces in School	1960	-45	2015	55	10



Bloomfield School District CHA Project Number: 30040

Rate of Discount (used for NPV) 3.0%

		Bloomfield Middle Sci	nool							y Cui		· ·											
Recommend	,	Item			Sa	vings			Cost	Simple	Life	Equivalent CO	NJ Smart Start	Direct Install	Payback w/		Simple	Projected Lifetin	e Savings		ROI	NPV	IRR
Y or N			kW	kWh	therms	No. 2 Oil gal	Water kgal	S		Payback	Expectancy	(Metric tons)	Incentives	Eligible (Y/N)	Incentives	kW	kWh	therms	keal/vr	\$			
N	ECM-1	Window Replacement	0.0	0	11,748	0	0	11,960	\$ 1,572,900	131.5	25	62.7	s -	N	131.5	0.0	0	293,711	0 S	298,998	(0.8)	(\$1,364,640)	-10.1%
Y	ECM-2	Install window AC controller	0.0	8,174	0	0	0	1,512	5 2,900	1.9	15	3.4	\$ -	N	1.9	0.0	122,610	0	0 S	22,683	6.8	\$15,152	52.0%
N	ECM-3	Replace rooftop units with high efficiency units	9.8	19,773	0	0	0	3,780	146,500	38.8	15	8.3	\$ 5,047	Y	37.4	147.5	296,595	0	0 S	66,495	(0.5)	(\$96,322)	-9.7%
N	ECM-4	Replace DX split units with high efficiency units	0.0	22,241	0	0	0	4,115	3 73,508	17.9	15	9.3	\$ 2,388	Y	17.3	0.0	333,614	0	0 \$	61,719	(0.2)	(\$22,001)	-1.7%
Y	ECM-5	Replace manual thermostats with programmable thermostats	0.0	12,621	288	0	0	2,628	\$ 4,901	1.9	15	6.8	\$ 825	N	1.6	0.0	189,315	4,320	0 \$	39,421	7.0	\$27,298	64.4%
N	ECM-6	Kitchen Hood Control	0.0	1,456	2,191	0	0	2,500	5 45,439	18.2	15	12.3	S -	N	18.2	0.0	21,840	32,865	0 \$	37,497	(0.2)	(\$15,597)	-2.3%
N	ECM-L1	Lighting Replacements / Upgrades	41	87,283	0	0	0	16,507	139,024	8.4	15	36.7	\$ 20,060	N	7.2	616.5	1,309,239	0	0 S	290,814	1.1	\$78,099	11.0%
N	ECM-L2	Install Lighting Controls (Add Occupancy Sensors)	0	72,493	0	0	0	11,019	\$ 22,829	2.1	15	30.5	\$ 3,560	N	1.7	0.0	1,087,395	0	0 \$	201,168	7.8	\$112,274	57.1%
Y	ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	41	137,032	0	0	0	24,069	197,006	8.2	15	57.6	\$ 23,620	N	7.2	616.5	2,055,480	0	0 \$	428,869	1.2	\$113,950	11.0%
		Tot	al 50.9	201,297	14,227	0	0 \$	50,564	3 2,043,154	40.4	16.4	160	\$ 31,880		39.8	764	3,019,454	330,896	- \$	955,681	(0.5)	(1.342.160)	9.1%
		Recommended Measures (highlighted green abov	e) 41.1	157,827	288	0	0 \$	28,209	204,807	7.3	15.0	68	\$ 24,445	0	6.4	617	2,367,405	4,320	- S	490,973	1.4	156,401	13.2%
		% of Existing	ıg 13%	25%	0%	0	0																

		City:	Newa	rk NJ			
	Occupied I	Hours/Week	60				
			Building	Auditorium	Gymnasium	Library	Classrooms
	Enthalov		Operating	Occupied	Occupied	Occupied	Occupied
Temp	h (Btu/lb)	Bin Hours	Hours	Hours	Hours	Hours	Hours
102.5							
97.5	35.4	6	2	0	0	0	0
92.5	37.4	31		0	0	0	0
87.5	35.0	131	47	0	0	0	0
82.5	33.0	500	179	0	0	0	0
77.5	31.5	620	221	0	0	0	0
72.5	29.9	664	237	0	0	0	0
67.5	27.2	854	305	0	0	0	0
62.5	24.0	927	331	0	0	0	0
57.5	20.3	600	214	0	0	0	0
52.5	18.2	730	261	0	0	0	0
47.5	16.0	491	175	0	0	0	0
42.5	14.5	656	234	0	0	0	0
37.5	12.5	1,023	365	0	0	0	0
32.5	10.5	734	262	0	0	0	0
27.5	8.7	334	119	0	0	0	0
22.5	7.0	252	90	0	0	0	0
17.5	5.4	125	45	0	0	0	0
12.5	3.7	47	17	0	0	0	0
7.5	2.1	34	12	0	0	0	0
2.5	1.3	- 1	0	0	0	0	0
-2.5		0					
-7.5							

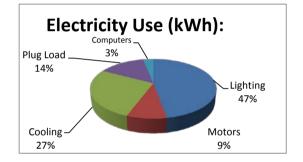


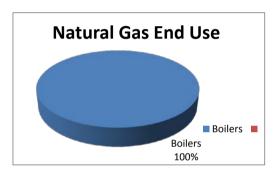


	Utility End Use Analysis										
Electric	ity Use (kWh):	Notes/Comments:									
636,960	Total	Based on utility analysis									
300,118	Lighting	From Lighting Calculations									
55,000	Motors	Estimated									
171,842	Cooling	Estimated from AC equipment									
90,000	Plug Load	Estimated									
20,000	Computers	Estimated									
Natural Ga	as Use (Therms):	Notes/Comments:									
75,621	Total	Based on utility analysis									
75,621	Boilers	Estimated									

47% 9% 27% 14% 3% 100%

0%





Note: pricing is for energy calculations only -do not use for procurement

ECM-1 Window Replacement

Existing: The original building has all single pane windows. The 2000 wing has double pane windows. Single pane windows lead to large amount of the heating/cooling loss. Replacing these old windows with high heat resistence double pane windows will help reduce the energy loss and save energy. Proposed: Replace single pane windows with double windows.

Linear Feet of panel Edge	5,180.0	LF	Cooling System Efficiency	0	kW/ton	Heating System Efficiency	75%	
Area of Panel	11,096.0	SF	Ex Occupied Clng Temp.	72	*F	Heating On Temp.	55	*F
Existing Infiltration Factor	0.20	cfm/LF	Ex Unoccupied Clng Temp.	72	*F	Ex Occupied Htg Temp.	72	*F
Proposed Infiltration Factor	0.10	cfm/LF	Cooling Occ Enthalpy Setpoint	27.5	Btu/lb	Ex Unoccupied Htg Temp.	72	*F
Existing U Value	1.00	Btuh/SF/°F	Cooling Unocc Enthalpy Setpoint	27.5	Btu/lb	Electricity	\$ 0.185	\$/kWh
Proposed U Value	0.60	Btuh/SF/°F				Natural Gas	\$ 1.02	\$/therm

					EXISTING LOADS PROPOSED LOADS		COOLING	G ENERGY	HEATING E	NERGY		
					Occupied	Unoccupied	Occupied	Unoccupied				
					Panel	Panel	Panel	Panel	Existing	Proposed		Proposed
Avg Outdoor		Existing	Occupied	Unoccupied	Infiltration &	Infiltration &	Infiltration &	Infiltration &	Cooling	Cooling	Existing	Heating
Air Temp. Bins	Avg Outdoor Air	Equipment Bin	Equipment Bin	Equipment Bin	Heat Load	Heat Load	Heat Load	Heat Load	Energy	Energy	Heating Energy	Energy
°F	Enthalpy	Hours	Hours	Hours	BTUH	BTUH	BTUH	BTUH	kWh	kWh	Therms	Therms
Α		В	С	D	E	F	G	н	1	J	К	L
102.5	50.1	0	0	0	-443,789	-443.789	-255,737	-255.737	0	0	0	0
97.5	42.5	6	2	4	-352.878	-352.878	-204,734	-204,734	ō	0	Ö	ō
92.5	39.5	45	16	29	-283,412	-283,412	-164.453	-164,453	0	0	0	0
87.5	36.6	146	52	94	-214,412	-214,412	-124,405	-124,405	0	0	0	0
82.5	34.0	298	106	192	-146,811	-146,811	-85,056	-85,056	0	0	0	0
77.5	31.6	476	170	306	-80,142	-80,142	-46,174	-46,174	0	0	0	0
72.5	29.2	662	237	426	-13,473	-13,473	-7,292	-7,292	0	0	0	0
67.5	27.0	740	264	476	0	0	0	0	0	0	0	0
62.5	24.5	765	273	492	0	0	0	0	0	0	0	0
57.5	21.4	733	262	471	0	0	0	0	0	0	0	0
52.5	18.7	668	239	430	238,190	238,190	140,732	140,732	0	0	2,122	1,254
47.5	16.2	659	235	424	299,265	299,265	176,817	176,817	0	0	2,631	1,554
42.5	14.4	685	245	441	360,339	360,339	212,903	212,903	0	0	3,293	1,945
37.5	12.6	739	264	475	421,413	421,413	248,988	248,988	0	0	4,154	2,454
32.5	10.7	717	256	461	482,488	482,488	285,073	285,073	0	0	4,615	2,727
27.5	8.6	543	194	349	543,562	543,562	321,158	321,158	0	0	3,937	2,326
22.5	6.8	318	114	205	604,637	604,637	357,243	357,243	0	0	2,565	1,515
17.5	5.5	245	88	158	665,711	665,711	393,329	393,329	0	0	2,176	1,285
12.5	4.1	156	56	100	726,785	726,785	429,414	429,414	0	0	1,512	894
7.5	2.6	92	33	59	787,860	787,860	465,499	465,499	0	0	967	571
2.5	1.0	36	13	23	848,934	848,934	501,584	501,584	0	0	408	241
-2.5	0.0	19	7	12	910,009	910,009	537,669	537,669	0	0	231	136
-7.5	-1.5	8	3	5	971,083	971,083	573,755	573,755	0	0	104	61
TOTALS		8,760	3,129	5,631					0	0	28,714	16,965

xisting Panel Infiltration	1,036	cfm
xisting Panel Heat Transfer	11,096	Btuh/°F
roposed Panel Infiltration	518	cfm
Proposed Panel Heat Transfer	6,658	Btuh/°F

Savings	11,748	Therms	\$ 11,960
	0	kWh	\$ -
			\$ 11,960

Panel ID	Location	Quantity	Width (ft)	Height (ft)	Linear Feet (LF)	Area (SF)	Infiltration Rate (CFM/LF)	U Value (Btuh/SF/°F)	Infiltration (CFM)	Heat Transfer (Btuh/°F)
1	Entire Buidling	25	12	6	900.0	1800.0	0.2	1	180.0	1800.0
1	Entire Buidling	68	4	4	1088.0	1088.0	0.2	1	217.6	1088.0
1	Entire Buidling	38	36	6	3192.0	8208.0	0.2	1	638.4	8208.0
Total		131			5180	11096	0.20	1.00	1036	11096

Multipliers	
Material:	1.10
Labor:	1.35
Equipment:	1.10

ECM-1 Window Replacement - Cost

Description	QTY	UNIT		UNIT COSTS	3	SUE	STOTAL CO	STS	TOTAL COST	DEMVDKS	
Description	QII	OIVII	MAT.	LABOR	EQUIP.	MAT.	LABOR EQUIP.		TOTAL COST	KLWAKKS	
Window Replacement	11,096	sqft	\$ 65	\$ 40	\$ -	\$721,240	\$443,840	\$ -	\$ 1,165,080	Vendor Est per SF	

Cost estimated are for energy savings calculations only- do not use for procurement

\$ 1,165,080	Subtotal
\$ 407,778	35% Contingency
\$ 1,572,900	Total

6

ECM-2 Install window AC controller

ECM Description: Window A/C units are currently controlled manually by the occupants and are not turned off when the room is unoccupied. This ECM evaluates implementation of a digital timer device that will automatically turn the window A/C unit off at a preset time.

ASSUMPTIO	NS	Comments			
Electric Cost	\$0.185	/ kWh			
Average run hours per Week	92	Hours			
Space Balance Point	55	F			
Space Temperature Setpoint	72	deg F	Setpoint.		
BTU/Hr Rating of existing DX equipment	168,000	Btu / Hr	Total BTU/hr of DX cooling equipment to be replaced.		
Average EER	10.0				
Existing Annual Electric Usage	17,861	kWh			

<u>Item</u>	<u>Value</u>	<u>Units</u>	Comments			
Proposed Annual Electric Usage	9,687	kWh	Unit will cycle on w/ temp of room. Possible operating time shown below			

ANNUAL SAVINGS							
Annual Electrical Usage Savings	8,174	kWh					
Annual Cost Savings	\$1,512						
Total Project Cost	\$2,900						
Simple Payback	2	years					

OAT - DB		Existing		Proposed	
Bin	Annual	Hours of	Proposed % of	hrs of	
Temp F	Hours	Operation	time of operation	Operation	
102.5	0				
97.5	6	3	100%	3	
92.5	31	17	88%	15	
87.5	131	71	76%	55	
82.5	500	272	65%	176	
77.5	620	338	53%	179	
72.5	664	362	41%	149	
67.5	854	0	0%	0	
62.5	927	0	0%	0	
57.5	600	0	0%	0	
52.5	730	0	0%	0	
47.5	491	0	0%	0	
42.5	656	0	0%	0	
37.5	1,023	0	0%	0	
32.5	734	0	0%	0	
27.5	334	0	0%	0	
22.5	252	0	0%	0	
17.5	125	0	0%	0	
12.5	47	0	0%	0	
7.5	34	0	0%	0	
2.5	1	0	0%	0	
-2.5	0	0	0%	0	
-7.5	0	0	0%	0	
Total	8,760	1,063	54%	577	

ECM-2 - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS		SUBTOTAL COSTS			TOTAL	REMARKS	
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	REWARKS
						0	\$ -	\$ -	\$ -	
Window AC Controller	14	EA	\$ 150	\$ -	\$ -	2156.7	\$ -	\$ -	\$ 2,157	Estimated
						\$ -	\$ -	\$ -	\$ -	

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

\$ 2,157	Subtotal
\$ 755	35% Contingency
\$ 2,900	Total

ECM-3 Replace rooftop units with high efficiency units

Description: This ECM evaluates the energy savings associated with replacing older less efficient heating and cooling equipment with modern high efficiency unitary equipment which has the same capacities. Claculations for savings in heating have not been made since the heat exchanger efficiencies are the same.

Equipment	Equipment			
Tag	Description	General Type	Cooling Capacity (Btu/h)	Heating Capacity (Btu/h)
Room 112	Rooftop Unit	HVAC	60,000	
Room 113	Rooftop Unit	HVAC	53,500	-
Library	Rooftop Unit	HVAC	120,000	
Library	Rooftop Unit	HVAC	300,000	
Science Wing	Rooftop Unit	HVAC	216,000	

<u>Item</u>	<u>Value</u>	<u>Units</u>	Formula/Comments
Demand Rate	\$ 6.57	/ kW	
Electricity Rate	\$ 0.15	/kWh	
		FORM	ULA CONSTANTS
Coincidence Factor	0.67		NJ Protocols
Conversion	3.412	btu/kW	
			COOLING
Cooling Capacity	749,500	btu/hr	
Baseline EER	-		NJ Protocols
Proposed EER	-		NJ Protocols
Equivalent Full Load Hours	1,131	hrs	NJ Protocols
Demand Savings	9.83	kW	Calculations are made per table below since units are of different sizes.
Energy Savings	19,773	kWh	
			SAVINGS
Demand Savings	9.83	kW	
Energy Savings	19,773	kWh	
Cost Savings	\$ 3,780		

Savings calculation formulas are taken from NJ Protocols document for Electric HVAC Equipment

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

ECM-3 - Cost

Description	QTY	UNIT	ı	JNIT COST	S	SL	JBTOTAL C	OSTS	TOTAL	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	REWARKS
						\$ -	\$ -	\$ -	\$ -	
Existing RTU demolition	5	EA	\$ 350	\$ 350		\$ 1,797	\$ 2,181	\$	\$ 3,978	RS Means 2012
(2) 5 Ton Rooftop Unit	2	EA	\$ 5,600	\$ 2,500		\$ 11,502	\$ 6,230	\$ -	\$ 17,732	RS Means 2012
(1) 10 Ton Rooftop Unit	1	EA	\$ 12,300	\$ 2,500		\$ 12,632	\$ 3,115	\$ -	\$ 15,747	RS Means 2012
(1) 18 Ton Rooftop Unit	1	EA	\$ 20,700	\$ 3,500		\$ 21,259	\$ 4,361	\$ -	\$ 25,620	RS Means 2012
(1) 25 Ton Rooftop Unit	1	EA	\$ 29,000	\$ 3,500		\$ 29,783	\$ 4,361	\$ -	\$ 34,144	RS Means 2012
Controls	5	EA	\$ 75	\$ 300		\$ 385	\$ 1,869	\$ -	\$ 2,254	RS Means 2012
Electrical - misc.	5	LS	\$ 500	\$ 500		\$ 2,568	\$ 3,115	\$ -	\$ 5,683	Estimated
Crane	1	EA			\$ 3,000			\$ 3,372	\$ 3,372	

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

\$ 108,530	Subtotal
\$ 37,985	35% Contingency
\$ 146,500	Total

ECM-4 Replace DX split units with high efficiency units

There are five split DX ac units - one serving the Principal's office and four serving the hallways. These units are 15 years old and have lived their useful life. This ECM evaluates energy savings by replacing the units with modern high efficiency units of the same capacity. Savings on heating have not been made because the heat exchanger efficiences are the same.

ASSUMPTIONS				Comments
Electric Cost		\$0.185	/ kWh	
Average run hours per Week		92	Hours	Unit is manually turned on (even if after hours)
Space Balance Point		55	F	
Space Temperature Setpoint		72	deg F	setpoint
BTU / Hr Rating of existing AC units		330,000	Btu / Hr	Total BTU/H of DX units
Average EER	<u> </u>	11.0		Estimated

<u>Item</u>	<u>Value</u>	<u>Units</u>	<u>Comments</u>
Total Number of Units	6		
Existing Annual Electric Usage	103,791	kWh	
Proposed EER	14.0		New DX units
Proposed Annual Electric Usage	81,550	kWh	Unit will cycle on w/ temp of room. Possible operating time shown below

ANNUAL SAV	INGS
Annual Savings	22,241 kWh
Annual Cost Savings	\$4,115

OAT - DB		Cooling Hrs	Assumed %	Assumed
Bin	Annual	at Temp Above	of time of	hrs of
Temp F	Hours	balance point	operation	Operation
102.5	0	0	100%	0
97.5	6	3	100%	3
92.5	31	17	88%	15
87.5	131	71	76%	55
82.5	500	272	65%	176
77.5	620	338	53%	179
72.5	664	362	41%	149
67.5	854	465	0%	0
62.5	927	505	0%	0
57.5	600	327	0%	0
52.5	730	0	0%	0
47.5	491	0	0%	0
42.5	656	0	0%	0
37.5	1023	0	0%	0
32.5	734	0	0%	0
27.5	334	0	0%	0
22.5	252	0	0%	0
17.5	125	0	0%	0
12.5	47	0	0%	0
7.5	34	0	0%	0
2.5	1	0	0%	0
-2.5	0	0	0%	0
-7.5	0	0	0%	0
Total	8.760	2.360	24%	577

FCM-4	- Cost	

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY U	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	DEMARKS
Description		ONIT	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	TOTAL COST	KEWAKKO
			A	^		^ · ·		•		
4 Ton DX	5	EA	\$ 5,300			\$ 27,216				RS Means 2012
7/1/2 ton DX	1	EA	\$ 12,600	\$ 1,000	\$ -	\$ 12,940	\$ 1,246	\$ -	\$ 14,186	RS Means 2012
Piping & Misc.	6	EA	\$ 500	\$ 500		\$ 3,081	\$ 3,738	\$ -	\$ 6,819	Estimated
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	

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

\$ 54,451	Subtotal
\$ 19,058	35% Contingency
\$ 73,508	Total

ECM-5 Replace manual thermostats with programmable thermostats

Discription: This measure assesses the energy savings associated with replacing the a standard non programmable thermostat with a programmable thermostat allowing for unoccupied temperature set- back

Natural Gas Savings	288	Therms
Cooling Electricity Savings	12,621	kWh
Total Cost Savings	\$ 2,628	
Estimated Total Project Cost	\$ 4,901	
Simple Payback	1.9	Yrs

Building Information:

153,38	O Sq Footage
Υ	Cooling
Υ	Heating

\$0.19 \$/kWh Blended \$1.02 \$/Therm

Nighttime Setback

EXISTING CONDITIONS			
Heating			
Heating Season Facility Temp	70	F	
Weekly Occupied Hours	92	hrs	
Heating Season Setback Temp	62	F	
Heating Season % Savings per Degree Setback	1%		
Annual Boiler Capacity	,	Mbtu/yr	
Connected Heating Load Capacity	1,410,000	Btu/hr	
Equivalent Full Load Heating Hours	900	hrs	
Heating Equipment Efficiency	75%		
Cooling			
Cooling Season Facility Temp	72	F	
Weekly Occupied Hours	92	hrs	
Cooling Season Setback Temp	80	F	
Cooling Season % Savings per Degree Setback	1%		
Connected Cooling Load Capacity	91	Tons	
Equivalent Full Load Cooling Hours	381	hrs	
Cooling Equipment EER	13.0		
SAVINGS		`	
Natural Gas Savings	288	Therms ³	
Cooling Electricity Savings	12,621	kWh	

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

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.00

ECM-5 - Cost

Description	QTY (TY UNIT	UNIT COSTS		SUBTOTAL COSTS			TOTAL COST REMARKS		
Description	QII	ONIT	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	TOTAL COST	KEIVIAKKS
						\$ -	\$ -	\$ -	\$ -	
Controller & Programming	11	EA	\$ 200	\$ 100		\$ 2,259	\$ 1,371	\$ -	\$ 3,630	Estimated
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	

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

\$ 3,630	Subtotal
\$ 1,271	35% Contingency
\$ 4,901	Total

ECM-6

Kitchen Hood Control

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 adjustes the exhaust 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.

<u>ltem</u>	Value	<u>Units</u>	Formula/Comments	
Fuel Cost	\$ 1.02	/ Therm		
Electricity Cost	\$ 0.19	/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	8	
Facility Type	School			
Quantity of Kitchen Hood Fan Motors	1			Q
Kitchen Hood Fan Motor HP	1.5	HP	Estimated	HP
Motor Load Factor	0.90		NJ Protocols	LF
Efficiency of Fan Motor(s)	84.0%			FEFF
Kitchen Hood Fan Run Hours	2,080			RH
Fan Motor Power Reduction (From VFD)	0.584			PR
Fan Electricity Savings	1,456	kWh		
Tail Liectricity Savings	1,430	HEATING SAVINGS		
Kitchen is Heated?	Υ	TIEATING GAVINGG		
Square Footage of Kitchen	800	ft ²	Estimated	SF
Code Required Ventilation Rate		CFM/ft ²	NJ Protocols	CFM/SF
Ventilation Oversize Factor	1.40	CFW/II	NJ Protocols	OF OF
Flow Reductuion (from VFD/Control)	0.310		No Flotocois	FR
Heating Degree Day	2,783		NJ Protocols Table	HDD
Heating System Efficiency	80%		AFUE (%)	HEFF
meaning dystem Emolency	0070		Al 02 (70)	
Heating Savings	219	MMbtu		
Heating Savings	2,191	Therms		
		COOLING SAVINGS		
Kitchen is Cooled?	N			
Cooling Degree Day	-		NJ Protocols Table	CDD
Cooling System Efficiency	-		COP	CEFF
Cooling Savings		kWh		
Cooling Savings	-	TOTAL SAVINGS		
Electricity Savings	1.456	kWh		
Fuel Savings	2.191	Therms		
i dei Savirigs	2,191	HIGHIIS		
Cost Savings	\$ 2,500			
· ·	-	<u> </u>		1

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

ECM-6 - Cost

Multipliers					
Material:	1.03				
Labor:	1.25				
Equipment:	1.12				

Description	QTY UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL	REMARKS	
Description	QII	UNIT	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	REMARKS
MeLink Kitchen Hood Control System	1	ea	\$ 9,500	\$ 9,000		\$ 9,757	\$ 11,214	\$ -	\$ 20,971	Vendor Est
1.5HP VFD	1	ea	\$ 1,575	\$ 431		\$ 1,618	\$ 536	\$ -	\$ 2,154	RS Means 2012
1.5 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
\$11,780	35% Contingency
\$ 45,439	Total

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)	153,380
Is this audit funded by NJ BPU (Y/N)	Yes

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

Board of Public Utilites (BPU)

	Annual Utilities				
	kWh Therm				
Existing Cost (from utility)	\$117,795	\$76,987			
Existing Usage (from utility)	636,960	75,621			
Proposed Savings	157,827	288			
Existing Total MMBtus	9,736				
Proposed Savings MMBtus	567				
% Energy Reduction	5.8%				
Proposed Annual Savings	\$28,209				

	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	\$0.00	\$0.00
Incentive #3	\$0.09	\$0.90	\$0.005	\$0.05	\$0.11	\$1.25	\$0.00	\$0.00

		Incentives \$					
	Elec	Elec Gas Total					
Incentive #1	\$0	\$0	\$0				
Incentive #2	\$0	\$0	\$0				
Incentive #3	\$0	\$0	\$0				
Total All Incentives	\$0	\$0	\$0				

Total Project Cost	\$204.807

		Allowable Incentive
% Incentives #1 of Utility Cost*	0.0%	\$0
% Incentives #2 of Project Cost**	0.0%	\$0
% Incentives #3 of Project Cost**	0.0%	\$0
Total Eligible Incentives***	•	0
Project Cost w/ Incentives	\$204	4,807

Project Payb	ack (years)
w/o Incentives	w/ Incentives
7.3	7.3

^{*} 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 #3 is 25% of total project cost.

Maximum allowable amount of Incentive #2 & #3 is \$1 million per gas account and \$1 million per electric account; maximum 2 million per project

^{**} Maximum allowable amount of Incentive #2 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.

\$0.152 \$/kWh \$6.57 \$/kW

					FXIS	TING CONDITION	NS.					
			No. of		EAIO	Watts per	10				Retrofit Control	
	Area Description	Usage	Fixtures	Standard Fixture Code	Fixture Code	Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
	Unique description of the location - Room number/Room	Describe Usage Type	No. of	Lighting Fixture Code	Code from Table of Standard Fixtur		(Watts/Fixt) * (Fixt	Pre-inst. control	Estimated	(kW/space) *	Retrofit control	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures before the		Wattages	Table of Standard	No.)	device	annual hours for the usage group	,	device	
			retrofit			Fixture			the usage group			
						Wattages						
202 20LED	Hallway 1st Fl Hallway 1st Fl	Hallway Hallway	112	2T 17 R F 4 (ELE) S 28 P F 1 (ELE)	F24ILL F41ILL	61 31	0.24 3.47	SW SW	2600 2600	634 9,027	NONE NONE	
3	Hallway 1st Fl	Hallway	61	W 34 W F 1 (MAG)	F41EE	43	2.62	SW	2600	6,820	NONE	
34	Hallway 1st Fl	Hallway	1	1T 32 C F 2 (ELE)	F42ILL	59	0.06	SW	2600	153	NONE	
65	Hallway 1st Fl	Hallway	1	I 100	I100/1	100	0.10	SW	2600	260	NONE	
35 262LED	Hallway 1st Fl Hallway 1st Fl	Hallway	21	T 32 R F 3 (ELE) CF42/1	F43ILL/2 CF42/1-I	90	0.09 1.01	SW SW	2600 2600	234 2,621	NONE	
39	Hallway 1st Fl	Hallway Hallway	20	2' 17 W F 2 (ELE)	F22ILL	33	0.66	SW	2600	1,716	NONE NONE	
34	Hallway 1st Fl	Hallway	115	1T 32 C F 2 (ELE)	F42ILL	59	6.79	SW	2600	17,641	NONE	
5LED	Hallway 1st Fl	Hallway	7	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.42	SW	2600	1,092	NONE	
20LED	Hallway 2nd Fl. Hallway 2nd Fl.	Hallway Hallway	134	S 28 P F 1 (ELE)	F41ILL F41EE	31 43	4.15 0.43	SW	2600 2600	10,800 1.118	NONE	
34	Hallway 2nd Fl.	Hallway	6	W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F41EE F42ILL	59	0.43	SW SW	2600	920	NONE NONE	
39	Hallway 2nd Fl.	Hallway	11	2' 17 W F 2 (ELE)	F22ILL	33	0.36	SW	2600	944	NONE	
28	Closet Janitors	Closet	1	CR 40 C F 1 (MAG)	FC16/1	35	0.04	SW	1092	38	NONE	
34	Restroom Boys	Restroom	3	1T 32 C F 2 (ELE)	F42ILL	59	0.18	SW	3120	552	NONE	
34 35	Restroom Girls CLRM 255	Restroom CLRM	3 15	1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	F42ILL F43ILL/2	59 90	0.18 1.35	SW SW	3120 1400	552 1,890	NONE OCC	
39	CLRM 255	CLRM	1	2' 17 W F 2 (ELE)	F22ILL	33	0.03	SW	1400	46	OCC	
35	CLRM 262	CLRM	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	1400	756	OCC	
35	CLRM 253	CLRM	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	SW	1400	1,890	000	
5LED 35	CLRM 253 CLRM 251	CLRM CLRM	1 16	2T 32 R F 2 (u) (ELE) T 32 R F 3 (ELE)	FU2LL F43ILL/2	90	0.06 1.44	SW SW	1400 1400	2,016	000	
35	CLRM 260	CLRM	6	T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.54	SW	1400	756	000	
35	CLRM 258	CLRM	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	1400	756	OCC	
35	CLRM 256	CLRM	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	1400	1,512	OCC	
35	CLRM 254 CLRM 252	CLRM	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW SW	1400	1,512	000	
35 35	CLRM 252 CLRM 250	CLRM CLRM	7	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.08 0.63	SW	1400 1400	1,512 882	00C	
34	Storage C3	Storage	1	1T 32 C F 2 (ELE)	F42ILL	59	0.06	SW	1040	61	OCC	
34	Storage C4	Storage	1	1T 32 C F 2 (ELE)	F42ILL	59	0.06	SW	1040	61	OCC	
34	CLRM 235 B	CLRM	12	1T 32 C F 2 (ELE)	F42ILL	59	0.71	SW	1400	991	OCC	
34 34	Hallway CLRM 235 A	Hallway CLRM	1 12	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.06 0.71	SW SW	2600 1400	153 991	NONE OCC	i
34	238	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	233	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	266	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	000	
34 34	231 234	Storage CLRM	9 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.53 1.24	SW SW	1040 1400	552 1,735	000	
34	229	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	232	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	227	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	000	
34 20LED	230 Restroom Boys	CLRM Restroom	21	1T 32 C F 2 (ELE) S 28 P F 1 (ELE)	F42ILL F41ILL	59 31	1.24 0.12	SW SW	1400 3120	1,735 387	000	
71	Closet Janitors	Closet	1	160	I60/1	60	0.12	SW	1092	66	000	
20LED	Restroom Girls	Restroom	4	S 28 P F 1 (ELE)	F41ILL	31	0.12	SW	3120	387	OCC	
34	228	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
11 3	226 Staff Launge Mens	CLRM Restroom	1	S 34 P F 2 (MAG) W 34 W F 1 (MAG)	F42EE F41EE	72 43	0.29 0.04	SW SW	1400 3120	403 134	00C	í
93	Mens	Restroom	1	175	175/1	75	0.04	SW	3120	234	000	
3	Womens	Restroom	1	W 34 W F 1 (MAG)	F41EE	43	0.04	SW	3120	134	OCC	
93	Womens	Restroom	1	175	175/1	75	0.08	SW	3120	234	OCC	
34	B4 B4	CLRM CLRM	7	1T 32 C F 2 (ELE)	F42ILL	59	0.41	SW	1400	578	000	í
34	225	CLRM	21	W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F41EE F42ILL	43 59	0.04 1.24	SW SW	1400 1400	60 1,735	00C	1
34	224	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	223	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	222	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	000	
77	Storage Storage	Storage Storage	5 2	W 34 W F 1 (MAG) I 150	F41EE I150/1	43 150	0.22 0.30	SW SW	1040 1040	224 312	00C	<u> </u>
34	CLRM 221	CLRM	24	1T 32 C F 2 (ELE)	F42ILL	59	1.42	SW	1400	1,982	OCC	
34	CLRM 220	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
5LED	Annex hallway	hallway	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	2600	312	NONE	
18 18	Annex Office	CLRM Office	7	T 32 R F 4 (ELE) T 32 R F 4 (ELE)	F44ILL F44ILL	112 112	0.78 0.11	SW SW	1400 2600	1,098 291	000	í
6	Restroom	Restroom Private	1 1	T 34 R F 4 (ELE)	F44ILL F44EE	112	0.11	SW	360	52	000	
169LED	Annex	CLRM	4	WP 250 MH	MH250/1	295	1.18	SW	1400	1,652	OCC	
68LED	Annex	CLRM	8	175 MH WALL	MH175/1	215	1.72	SW	1400	2,408	OCC	

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\$0.152 \$/kWh \$6.57 \$/kW

					FXIS	TING CONDITION	S					1
ĺ			No. of		EAIO	Watts per	Ĭ				Retrofit	
	Area Description	Usage	Fixtures	Standard Fixture Code	Fixture Code	Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Control	
Field	Unique description of the location - Room number/Room	Describe Usage Type	No. of	Lighting Fixture Code	Code from Table of Standard Fixtur		(Watts/Fixt) * (Fixt	Pre-inst. control	Estimated	(kW/space) *	Retrofit control	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures		Wattages	Table of	No.)	device	annual hours for		device	
			before the			Standard			the usage group			
			retrofit			Fixture Wattages						
34	B120 CLRM	CLRM	15	1T 32 C F 2 (ELE)	F42ILL	59	0.89	SW	1400	1,239	OCC	
34	B121 CLRM	CLRM	24	1T 32 C F 2 (ELE)	F42ILL	59	1.42	SW	1400	1,982		
34	B122A CLRM	CLRM	8	1T 32 C F 2 (ELE)	F42ILL	59	0.47	SW	1400	661	OCC	
34	B122B CLRM	CLRM	8	1T 32 C F 2 (ELE)	F42ILL	59	0.47	SW	1400	661		
34	B122 hallway	hallway	1	1T 32 C F 2 (ELE)	F42ILL	59	0.06	SW	2600	153		
34 34	B123 CLRM B124 Computer Lab	CLRM CLRM	24	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.42 1.24	SW SW	1400 1400	1,982 1,735		
34	B124 Computer Lab	CLRM	21	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	1.24	SW	1400	1,735		
34	B126 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735		
11	Restroom Boys	Restroom	4	S 34 P F 2 (MAG)	F42EE	72	0.29	SW	3120	899		
11	Restroom Girls	Restroom	4	S 34 P F 2 (MAG)	F42EE	72	0.29	SW	3120	899	OCC	
65	Closet Janitors	Closet	1	I 100	I100/1	100	0.10	SW	1092	109		
34	B128 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735		
34	B127 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735		
34 34	B130 CLRM B129 CLRM	CLRM CLRM	21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.24 1.24	SW SW	1400 1400	1,735 1,735		
34	Storage B-2	Storage	10	W 34 W F 1 (MAG)	F42ILL F41EE	43	0.43	SW	1040	1,735		
34	B132 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F41EE F42ILL	59	1.24	SW	1400	1,735		
34	B131 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735		
34	B134 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735		
34	B133 CLRM	CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.24	SW	1400	1,735	OCC	
34	B132 A	Office	4	1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW	2600	614		
34	B132 B	Office	4	1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW	2600	614		
3	Mens Staff	Restroom Private	1	W 34 W F 1 (MAG)	F41EE	43	0.04	SW	360	15		
3	Womens Staff	Restroom Private	1	W 34 W F 1 (MAG)	F41EE	43	0.04	SW	360	15		
34 34	Assistant Principal Offices	Office Office	7	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.35 0.41	SW SW	2600 2600	920 1,074		
34	114A Assistant Principal	Office	6	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.41	SW	2600	920		
34	114B	CLRM	7	1T 32 C F 2 (ELE)	F42ILL	59	0.33	SW	1400	578		
261	Library	CLRM	8	PAR 38 SP	H100/1	100	0.80	SW	1400	1,120		
189	Library	CLRM	16	X 7.0 W 1	ECF7/1	10	0.16	SW	1400	224		
68LED	Library	CLRM	9	175 MH WALL	MH175/1	215	1.94	SW	1400	2,709		
20LED	Library	CLRM	50	S 28 P F 1 (ELE)	F41ILL	31	1.55	SW	1400	2,170		
34	Library	CLRM	42	1T 32 C F 2 (ELE)	F42ILL	59	2.48	SW	1400	3,469		
34	118 Comp Lab	CLRM	8	1T 32 C F 2 (ELE)	F42ILL F43ILL/2	59 90	0.47	SW	1400 1040	661	000	
35 35	117 empty rm 116 Storage	Storage Storage	3 2	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2	90	0.27 0.18	SW SW	1040	281 187		
34	Principal Office A-102	Office	3	1T 32 C F 2 (ELE)	F42ILL	59	0.18	SW	2600	460		
34	cont rm.	Office	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920		
34	Guidance	Office	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920		
3	Guidance	Storage	1	W 34 W F 1 (MAG)	F41EE	43	0.04	SW	1040	45		
34	Guidance	Office	2	1T 32 C F 2 (ELE)	F42ILL	59	0.12	SW	2600	307		
34	Guidance	Office	2	1T 32 C F 2 (ELE)	F42ILL	59	0.12	SW	2600	307		
34	Conference Conference Hallway	Office Hallway	2	1T 32 C F 2 (ELE)	F42ILL F41EE	59 43	0.24 0.09	SW SW	2600	614		
3	Conference Hallway Conference kitchenet	Closet	2	W 34 W F 1 (MAG) W 34 W F 1 (MAG)	F41EE F41EE	43	0.09	SW	2600 1092	224 94		
34	Conference Copy Rm	Office		1T 32 C F 2 (ELE)	F41EE F42ILL	59	0.09	SW	2600	614		
34	General Office	CLRM		1T 32 C F 2 (ELE)	F42ILL	59	0.71	SW	1400	991		
34	Councel Office	Office	4	1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW	2600	614		
65	Mens Rm	Restroom	1	I 100	I100/1	100	0.10	SW	3120	312		
65	Womens Rm	Restroom	1	I 100	I100/1	100	0.10	SW	3120	312		
34	Entrance Way	Hallway	2	1T 32 C F 2 (ELE)	F42ILL	59	0.12	SW	2600	307		
20LED	Entrance Way	Hallway	3	S 28 P F 1 (ELE)	F41ILL	31	0.09	SW	2600	242		
20LED	Waiting Area	Hallway	6	S 28 P F 1 (ELE)	F41ILL F43ILL/2	31	0.19	SW	2600	484		
35 34	Waiting Area Elec Rm	Hallway Closet	8 2	T 32 R F 3 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL	90 59	0.72 0.12	SW SW	2600 1092	1,872 129		
35	Rm 150	CLRM	7	T 32 R F 3 (ELE)	F42ILL F43ILL/2	90	0.63	SW	1400	882		
35	Rm 152	CLRM	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	1400	1,512		
35	Rm 151	CLRM	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	1400	1,512		
35	Rm 154	CLRM	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	1400	1,512		
35	Rm 156	CLRM	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	1400	1,512		
35	Prep Rm	Storage	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	1040	1,123		
35	Rm 153	CLRM	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	1400	2,016		
35	Rm 155	CLRM	17	T 32 R F 3 (ELE)	F43ILL/2	90	1.53	SW	1400	2,142		
35	Prep Rm	Storage	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	1040	562		
34 34	Storage C2	Storage	2	1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.12	SW SW	1040 1040	123		
65	Storage C1 Custodian Office	Storage Office	2 2	1T 32 C F 2 (ELE) I 100	F42ILL 1100/1	100	0.12 0.20	SW	2600	123 520		
UĐ	Custonidii Ollice	Office		1100	1100/1	100	U.20	SVV	2000	520	000	

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\$0.152 \$/kWh \$6.57 \$/kW

					FXIS	TING CONDITION	S					1
Ī			No. of		EXIO	Watts per	Ĭ				Retrofit	
	Area Description	Usage	Fixtures	Standard Fixture Code	Fixture Code	Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Control	
Field	Unique description of the location - Room number/Room	Describe Usage Type	No. of	Lighting Fixture Code	Code from Table of Standard Fixtur	e Value from	(Watts/Fixt) * (Fixt	Pre-inst. control	Estimated	(kW/space) *	Retrofit control	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures		Wattages	Table of	No.)	device	annual hours for		device	
			before the			Standard			the usage group			
			retrofit			Fixture						
9LED	Gvm	Gvm	50	High Bay MH 250	MH250/1	Wattages 295	14.75	SW	2964	43,719	OCC	
105LED	Boys Locker	Hallway	11	W 32 W F 1	F41LL	32	0.35	SW	2600	915		
65	Boys Locker - Shower	Closet	5	l 100	I100/1	100	0.50	SW	1092	546	OCC	
105LED	Boys Locker - Restroom	Restroom	2	W 32 W F 1	F41LL	32	0.06	SW	3120	200		
77	Boys Locker - Storage	Storage	4	I 150	I150/1	150	0.60	SW	1040	624		<u> </u>
65 405LED	Boys Locker - Storage	Storage	3	I 100	I100/1	100	0.30	SW	1040 2600	312		
105LED 65	Girls Locker Girls Locker - Shower	Hallway Closet	11 5	W 32 W F 1 I 100	F41LL I100/1	32 100	0.35 0.50	SW SW	1092	915 546		
105LED	Girls Locker - Snower	Restroom	2	W 32 W F 1	F41LL	32	0.06	SW	3120	200		
77	Girls Locker - Storage	Storage	4	I 150	I150/1	150	0.60	SW	1040	624		
65	Girls Locker - Storage	Storage	3	I 100	1100/1	100	0.30	SW	1040	312		
34	Faculty Rm	CLRM	8	1T 32 C F 2 (ELE)	F42ILL	59	0.47	SW	1400	661	OCC	
93	Mens Rm	Restroom	2	l 75	175/1	75	0.15	SW	3120	468		
93	Womens Rm	Restroom	2	l 75	175/1	75	0.15	SW	3120	468		
34	A-106	CLRM CLRM	36	1T 32 C F 2 (ELE)	F42ILL	59	2.12	SW	1400	2,974		
34 34	A-107 A-108	CLRM	12 23	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.71 1.36	SW SW	1400 1400	991 1.900		
34	A-108 A-109 Art	CLRM	26	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	1.53	SW	1400	2.148		
105LED	A-109 Art Storage	Storage	20	W 32 W F 1	F41LL	32	0.06	SW	1040	2,146		
34	A-110	CLRM	24	1T 32 C F 2 (ELE)	F42ILL	59	1.42	SW	1400	1,982		
40LED	A-110 Storage	Storage	1	T 32 R F 2 (ELE)	F42LL	60	0.06	SW	1040	62		
34	A-111	CLRM	24	1T 32 C F 2 (ELÉ)	F42ILL	59	1.42	SW	1400	1,982	OCC	
40LED	A-111 Storage	Storage	1	T 32 R F 2 (ELE)	F42LL	60	0.06	SW	1040	62		
34	113	CLRM	27	1T 32 C F 2 (ELE)	F42ILL	59	1.59	SW	1400	2,230		
34	112	CLRM	27	1T 32 C F 2 (ELE)	F42ILL	59	1.59	SW	1400	2,230		
34	Office Music Proc	Office	4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW SW	2600	614 614		
34 34	Music Rms Music Rms	Office Office	4	1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.24 0.24	SW	2600 2600	614		<u></u>
34	Music Rms	Office	4	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.24	SW	2600	614		
34	Music Rms	Office	4	1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW	2600	614		
34	Music Rms	Office	4	1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW	2600	614		
34	Music Rms	Office	4	1T 32 C F 2 (ELE)	F42ILL	59	0.24	SW	2600	614	OCC	
40LED	Boys Restroom	Restroom	2	T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3120	374		
40LED	Girls Restroom	Restroom	2	T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3120	374		
40LED	Aud Stage	Stage CLRM	26	T 32 R F 2 (ELE)	F42LL	60	1.56	SW	360	562		
68LED 77	Auditorium Storage	Storage	43	175 MH WALL I 150	MH175/1 I150/1	215 150	9.25 0.30	SW SW	1400 1040	12,943 312		
93	Nursing	CLRM	1	175	175/1	75	0.08	SW	1400	105		
18	Nursing	CLRM	2	T 32 R F 4 (ELE)	F44ILL	112	0.22	SW	1400	314		
34	Nursing	CLRM	3	1T 32 C F 2 (ELE)	F42ILL	59	0.18	SW	1400	248		
40LED	Nursing - Restroom	Restroom Private	1	T 32 R F 2 (ELE)	F42LL	60	0.06	SW	360	22	OCC	
18	Nursing - Restroom	Restroom Private	1	T 32 R F 4 (ELE)	F44ILL	112	0.11	SW	360	40		
34	Cafeteria	CLRM	72	1T 32 C F 2 (ELE)	F42ILL	59	4.25	SW	1400	5,947		
262LED	Cafeteria	CLRM	24	CF42/1	CF42/1-I	48	1.15	SW	1400	1,613		
183 93	Cafeteria Kitchen	CLRM CLRM	11	BED 17 C F 4 I 75	F24ILL 175/1	61 75	0.37 0.83	SW SW	1400 1400	512 1,155		
34	Kitchen	CLRM		1T 32 C F 2 (ELE)	175/1 F42ILL	59	1.36	SW	1400	1,155		
40LED	Kitchen	CLRM	3	T 32 R F 2 (ELE)	F42LL	60	0.18	SW	1400	252		
40LED	Faculty Dinning	CLRM	10	T 32 R F 2 (ELE)	F42LL	60	0.60	SW	1400	840		
40LED	Storage - assumed	Storage	4	T 32 R F 2 (ELE)	F42LL	60	0.24	SW	1040	250		
65	Receiving	Hallway	4	I 100	I100/1	100	0.40	SW	2600	1,040	NONE	
262LED	Receiving	Hallway	1	CF42/1	CF42/1-I	48	0.05	SW	2600	125		
20LED	Receiving	Hallway	2	S 28 P F 1 (ELE)	F41ILL	31	0.06	SW	2600	161		<u> </u>
34	140	CLRM	25	1T 32 C F 2 (ELE)	F42ILL	59	1.48	SW	1400	2,065		
34 34	141 Wood 141 Wood	CLRM CLRM	14 6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.83 0.35	SW SW	1400 1400	1,156 496		<u></u>
34	141 Wood 141 Wood	CLRM	12	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.35	SW	1400	991		
18	Time Out	CLRM	2	T 32 R F 4 (ELE)	F44ILL	112	0.71	SW	1400	314		
34	142 Fitness Center	CLRM	30	1T 32 C F 2 (ELE)	F42ILL	59	1.77	SW	1400	2,478		
93	142 Fitness Center - Storage	Storage	1	175	175/1	75	0.08	SW	1040	78		
93	142 Fitness Center - Storage	Storage	3	1 75	175/1	75	0.23	SW	1040	234		
34	142 Fitness Center - Storage	Storage	2	1T 32 C F 2 (ELE)	F42ILL	59	0.12	SW	1040	123	OCC	
34	Closet Janitor	Closet	1	1T 32 C F 2 (ELE)	F42ILL	59	0.06	SW	1092	64		
34	Boys	Restroom	2	1T 32 C F 2 (ELE)	F42ILL	59	0.12	SW	3120	368		
34	Girls	Restroom	2	1T 32 C F 2 (ELE)	F42ILL	59	0.12	SW	3120	368		<u></u>
34	Rm C-5	Office	3	1T 32 C F 2 (ELE)	F42ILL	59	0.18	SW	2600	460		
93 93	Storage Display	Storage Hallway	6	l 75	175/1 175/1	75 75	0.08 0.45	SW SW	1040 2600	78 1,170		
93	Display	HailWay	0	113	1/0/1	10	0.40	SVV	2000	1,170	000	<u> </u>

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\$0.152 \$6.57 \$/kW

					EXIST	ING CONDITIONS	S				Retrofit	
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Control	
Field	Unique description of the location - Room number/Room	Describe Usage Type	No. of	Lighting Fixture Code	Code from Table of Standard Fixture	Value from	(Watts/Fixt) * (Fixt	Pre-inst. control	Estimated	(kW/space) *	Retrofit control	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures before the		Wattages	Table of Standard	No.)	device	annual hours for the usage group	, , , , , , , , , , , , , , , , , , , ,	device	
			retrofit			Fixture Wattages						
105LED	Boys Rm	Restroom	4	W 32 W F 1	F41LL	32	0.13	SW	3120	399	OCC	
105LED	Girls Rm	Restroom	4	W 32 W F 1	F41LL	32	0.13	SW	3120	399	OCC	
105LED	Storage	Storage	1	W 32 W F 1	F41LL	32	0.03	SW	1040	33	OCC	
93	Storage	Storage	1	I 75	175/1	75	0.08	SW	1040	78	OCC	
34	Stairway 1	Hallway	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920	NONE	
78	Boiler Rm	Mech	7	EP I 100	I100/1	100	0.70	SW	3000	2,100	OCC	
34	Stairway 2	Hallway	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920	NONE	
34	Stairway 3	Hallway	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920	NONE	
34	Stairway 4	Hallway	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920		
34	Stairway 5	Hallway	6	1T 32 C F 2 (ELE)	F42ILL	59	0.35	SW	2600	920	NONE	
262LED	Exterior	Exterior	8	CF42/1	CF42/1-I	48	0.38	Breaker	2912	1,118	PHC	
68LED	Exterior	Exterior	4	175 MH WALL	MH175/1	215	0.86	Breaker	2912	2,504		
93	Exterior	Exterior	19	175	175/1	75	1.43	Breaker	2912	4,150	PHC	
	Total		2,490			 	167.65			300,118		

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ECM-L1 Light				EXISTING COND	DITIONS							RETROFIT	CONDITIONS						COST & SAVING	GS 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 Li	NJ Smart Start	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 4 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	10 Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture	(Watts/Fixt) * (Fixt I	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit		Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture	(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) Annual kWh)	(kWh Saved) * (\$/kWh)		rescriptive Lighting for the sures control of the s	for renovations re	Length of time for renovations cost to be recovered
202 20LED	Hallway 1st Fl Hallway 1st Fl	4 112	2T 17 R F 4 (ELE) S 28 P F 1 (ELE)	F24ILL F41ILL	61 31	0.2 3.5	SW SW	2600 2600	634 9,027		2T 17 R F 4 (ELE) 4 ft LED Tube	F24ILL 200732x1	61 15	0.2 1.7	SW SW	2,600 2,600	634 4,368		\$ - \$ 850.79	\$ - \$0 \$ 16,262.40 \$5	0	19.1	#DIV/0! 18.5
3 34 65	Hallway 1st FI Hallway 1st FI	61	W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F41EE F42ILL I100/1	43 59	2.6 0.1	SW SW	2600 2600	6,820 153	61	W 28 W F 1 1T 32 C F 2 (ELE)	F41SSILL F42ILL	26 59	1.6 0.1	SW SW	2,600 2,600	4,124 153		\$ 492.34 \$ -	\$ - \$0	0	23.4	23.4 #DIV/0!
35 262LED	Hallway 1st Fl Hallway 1st Fl Hallway 1st Fl	1 21	T 32 R F 3 (ELE) CF42/1	F43ILL/2 CF42/1-I	90 48	0.1 0.1 1.0	SW SW	2600 2600	234 2,621	21	T 32 R F 3 (ELE) 6BLMWLED	F43ILL/2 6BLMWLED	90	0.0 0.1 0.3	SW SW	2,600 2,600 2,600	234 710	- 0.0	\$ 34.66 \$ - \$ 348.96	\$ - \$0	0	9.7	#DIV/0! 9.7
39 34	Hallway 1st Fl Hallway 1st Fl	20 115	2' 17 W F 2 (ELE) 1T 32 C F 2 (ELE)	F22ILL F42ILL	33 59	0.7 6.8	SW SW	2600 2600	1,716 17,641 1,092	115	2' 17 W F 2 (ELE) 1T 32 C F 2 (ELE)	F22ILL F42ILL	33 59	0.7 6.8	SW	2,600 2,600	1,716 17,641	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0	400	#DIV/0! #DIV/0!
5LED 20LED 3	Hallway 1st Fl Hallway 2nd Fl. Hallway 2nd Fl.	134 10	2T 32 R F 2 (u) (ELE) S 28 P F 1 (ELE) W 34 W F 1 (MAG)	FU2LL F41ILL F41EE	60 31 43	0.4 4.2 0.4	SW SW SW	2600 2600 2600	10,800 1,118	134	2T XX R LED 4 ft LED Tube W 28 W F 1	2RTLED 200732x1 F41SSILL	15 26	0.2 2.0 0.3	SW SW SW	2,600 2,600 2,600	455 5,226 676	5,574 2.1	\$ 116.32 \$ 1,017.91 \$ 80.71	\$ 19,456.80 \$6	670 0	12.2 19.1 23.4	11.6 18.5 23.4
34 39	Hallway 2nd Fl. Hallway 2nd Fl. Closet Janitors	6 11	1T 32 C F 2 (ELE) 2' 17 W F 2 (ELE) CR 40 C F 1 (MAG)	F42ILL F22ILL FC164	59 33	0.4 0.4 0.0	SW SW SW	2600 2600 1092	920 944 38	11	1T 32 C F 2 (ELE) 2' 17 W F 2 (ELE) CR 40 C F 1 (MAG)	F42ILL F22ILL FC16/1	59 33	0.4 0.4 0.0	SW SW SW	2,600 2,600 1,092	920 944 38	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
28 34 34 35	Restroom Boys Restroom Girls	3	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	FC16/1 F42ILL F42ILL	59 59	0.2	SW SW	3120 3120	38 552 552	3	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.0 0.2 0.2	SW SW	3,120 3,120	552 552	- 0.0 - 0.0	\$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0!
39	CLRM 255 CLRM 255 CLRM 262	15 1	T 32 R F 3 (ELE) 2' 17 W F 2 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F22ILL F43ILL/2	90 33 90	1.4 0.0 0.5	SW SW SW	1400 1400 1400	1,890 46 756	1	T 32 R F 3 (ELE) 2' 17 W F 2 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F22ILL F43ILL/2	90 33	1.4 0.0 0.5	SW SW SW	1,400 1,400 1,400	1,890 46 756	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
35 35 5LED 35	CLRM 253 CLRM 253	15 1	T 32 R F 3 (ELE) 2T 32 R F 2 (u) (ELE)	F43ILL/2 FU2LL	90 60	1.4 0.1	SW SW	1400 1400	1,890 84	15 1	T 32 R F 3 (ELE) 2T XX R LED	F43ILL/2 2RTLED	90 25	1.4 0.0	SW	1,400 1,400	1,890 35	- 0.0 49 0.0	\$ - \$ 10.22	\$ - \$0 \$ 202.50 \$1	0	19.8	#DIV/0! 18.8
35 35 35	CLRM 251 CLRM 260 CLRM 258	16 6 6	T 32 R F 3 (ELE) T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2 F43ILL/2	90 90 90	1.4 0.5 0.5	SW SW SW	1400 1400 1400	2,016 756 756		T 32 R F 3 (ELE) T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2 F43ILL/2	90 90 90	1.4 0.5 0.5	SW SW SW	1,400 1,400 1,400	2,016 756 756		\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
35 35	CLRM 256 CLRM 254	12 12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90 90	1.1	SW SW	1400 1400	1,512 1,512	12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90 90	1.1	SW SW	1,400 1,400	1,512 1,512	- 0.0	\$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0!
35 35 34	CLRM 252 CLRM 250 Storage C3	7 1	T 32 R F 3 (ELE) T 32 R F 3 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F43ILL/2 F42ILL	90 90 59	1.1 0.6 0.1	SW SW SW	1400 1400 1040	1,512 882 61		T 32 R F 3 (ELE) T 32 R F 3 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F43ILL/2 F42ILL	90 90 59	1.1 0.6 0.1	SW SW SW	1,400 1,400 1,040	1,512 882 61		\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
34 34	Storage C4 CLRM 235 B	1 12	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1 0.7	SW SW	1040 1400	61 991	12	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1 0.7	SW SW	1,040 1,400	61 991	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0!
34 34 34	Hallway CLRM 235 A 238	1 12 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	0.1 0.7 1.2	SW SW SW	2600 1400 1400	153 991 1,735	12 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.1 0.7 1.2	SW SW SW	2,600 1,400 1,400	153 991 1,735	- 0.0 - 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
34 34	233 266	21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2 1.2 0.5	SW SW	1400 1400 1040	1,735 1,735		1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2 1.2 0.5	SW SW SW	1,400 1,400	1,735 1,735	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0!
34 34 34 34	231 234 229	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	1.2	SW SW SW	1400 1400	1,735 1,735	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.2 1.2	SW SW	1,040 1,400 1,400	552 1,735 1,735	- 0.0 - 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
34 34 34	232 227 230	21 21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.2 1.2	SW SW	1400 1400 1400	1,735 1,735 1,735		1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.2 1.2	SW SW	1,400 1,400 1,400	1,735 1,735 1,735		\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
20LED 71	Restroom Boys Closet Janitors	4	S 28 P F 1 (ELE) I 60	F41ILL I60/1	31 60	0.1 0.1	SW SW	3120 1092	387 66	1	4 ft LED Tube CF 26	200732x1 CFQ26/1-L	15 27	0.1 0.0	SW SW	3,120 1,092	187 29	36 0.0	\$ 35.45 \$ 8.09	\$ 6.75 \$0	0	16.4 0.8	15.8 0.8
20LED 34 11	Restroom Girls 228 226 Staff Launge	4 21 4	S 28 P F 1 (ELE) 1T 32 C F 2 (ELE) S 34 P F 2 (MAG)	F41ILL F42ILL F42EE	31 59 72	0.1 1.2 0.3	SW SW SW	3120 1400 1400	387 1,735 403	21	4 ft LED Tube 1T 32 C F 2 (ELE) C 28 P F 2	200732x1 F42ILL F42SSILI	15 59 48	0.1 1.2 0.2	SW SW SW	3,120 1,400 1,400	187 1,735 269	200 0.1	\$ 35.45 \$ - \$ 28.04	\$ - \$0	20 0	16.4	15.8 #DIV/0! 16.4
3 93	Mens Mens	1	W 34 W F 1 (MAG) 175	F41EE I75/1	43 75	0.0 0.1	SW SW	3120 3120	134 234	1	W 28 W F 1 CF 26	F41SSILL CFQ26/1-L	26 27	0.0	SW SW	3,120 3,120	81 84	53 0.0 150 0.0	\$ 9.42 \$ 26.59	\$ 189.00 \$0 \$ 5.40 \$0	0	20.1 0.2	20.1 0.2
93 34	Womens Womens B4	1 1 7	W 34 W F 1 (MAG) 175 1T 32 C F 2 (FLF)	F41EE 175/1 F42II I	43 75 59	0.0 0.1 0.4	SW SW	3120 3120 1400	134 234 578	1	W 28 W F 1 CF 26 1T 32 C F 2 (FLF)	F41SSILL CFQ26/1-L F42ILL	26 27 59	0.0 0.0 0.4	SW SW SW	3,120 3,120 1,400	81 84 578	150 0.0	\$ 9.42 \$ 26.59	\$ 189.00 \$0 \$ 5.40 \$0 \$ - \$0	0	20.1 0.2	20.1 0.2 #DIV/0!
3 34	B4 225	1 21	1T 32 C F 2 (ELE) W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F42ILL F41EE F42ILL	43 59	0.0 1.2	SW SW	1400 1400	1,735	1 21	1T 32 C F 2 (ELE) W 28 W F 1 1T 32 C F 2 (ELE)	F41SSILL F42ILL	26 59	0.0 1.2	SW	1,400 1,400	36 1,735	24 0.0 - 0.0	\$ 4.96 \$ -	\$ 189.00 \$0 \$ - \$0	0	38.1	38.1 #DIV/0!
34 34 34	224 223 222	21 21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	1.2 1.2 1.2	SW SW SW	1400 1400 1400	1,735 1,735 1,735	21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	1.2 1.2 1.2	SW SW SW	1,400 1,400 1,400	1,735 1,735 1,735	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
77	Storage Storage CLRM 221	5 2	1T 32 C F 2 (ELE) W 34 W F 1 (MAG) 1150 1T 32 C F 2 (ELE)	F42ILL F41EE I150/1 F42ILL	43 150	0.2 0.3 1.4	SW SW	1040 1040 1400	224 312 1 982	5 2	W 28 W F 1 CF 26	F41SSILL CFQ26/1-L F42ILL	26 27	0.1 0.1 1.4	SW SW SW	1,400 1,040 1,040 1,400	135 56 1,982	88 0.1 256 0.2	\$ 20.16 \$ 58.36	\$ 945.00 \$0 \$ 13.50 \$0	0	46.9 0.2	46.9 0.2 #DIV/0!
34 34 5LED	CLRM 220 Annex hallway	21 2	1T 32 C F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42ILL F42ILL FU2LL	59 60	1.4 1.2 0.1	SW SW	1400 1400 2600	1,735 312		1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 2T XX R LED	F42ILL 2RTLED	59 59 25	1.4	SW SW	1,400 1,400 2,600	1,735 130		\$ -	\$ - \$0	0	12.2	#DIV/0! 11.6
18 18 6	Annex Office	7	T 32 R F 4 (ELE) T 32 R F 4 (ELE) T 34 R F 4 (MAG)	F44ILL F44ILL F44EE	112 112 144	0.8 0.1	SW SW	1400 2600 360	1,098 291 52	1	T 28 R F 4 T 28 R F 4 T 28 R F 4	F44SSILL F44SSILL F44SSILL	96 96	0.7 0.1 0.1	SW SW SW	1,400 2,600 360	941 250	157 0.1 42 0.0 17 0.0	\$ 32.71 \$ 7.60	\$ 141.75 \$0	0	30.3 18.7 22.1	30.3 18.7 22.1
169LED 68LED	Restroom Annex Annex	4 8	WP 250 MH 175 MH WALL	MH250/1 MH175/1	295 215	1.2	SW SW	1400 1400	1,652 2,408	4 8	FXLED78 WPLED26	FXLED78/1 WPLED26	78 30	0.1 0.3 0.2	SW SW	1,400 1,400	437 336	1,215 0.9	\$ 6.42 \$ 253.49 \$ 432.22	\$ 3,376.78 \$6	600	13.3 9.3	11.0 6.5
34 34 34	B120 CLRM B121 CLRM B122A CLRM	15 24 8	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.9 1.4 0.5	SW SW	1400 1400 1400	1,239 1,982 661	24	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.9 1.4 0.5	SW SW SW	1,400 1,400 1,400	1,239 1,982 661	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
34 34 34	B122B CLRM B122 hallway	8	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.5 0.1	SW SW	1400 2600	661 153	8	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.5 0.1	SW SW	1,400 2,600	661 153	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0!
34	B123 CLRM B124 Computer Lab B125 CLRM	21	1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.4 1.2 1.2	SW SW SW	1400 1400 1400	1,982 1,735 1,735	24 21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.4 1.2 1.2	SW SW SW	1,400 1,400 1,400	1,982 1,735 1,735	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
34 34 11	B125 CLRM B126 CLRM Restroom Boys	21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) S 34 P F 2 (MAG)	F42ILL F42EE	59 72	1.2	SW SW	1400 3120	1,735 899 899	21	1T 32 C F 2 (ELE) C 28 P F 2	F42ILL F42SSILL	59 48	1.2 0.2	SW SW	1,400 3,120	1,735 599	- 0.0	\$ -	\$ - \$0 \$ 459.00 \$0	0	8.6	#DIV/0! 8.6
65 34	Restroom Girls Closet Janitors B128 CLRM	1 21	S 34 P F 2 (MAG) I 100 1T 32 C F 2 (ELE)	F42EE I100/1 F42ILL	100 59	0.3 0.1 1.2	SW SW	3120 1092 1400	109 1,735	1 21	C 28 P F 2 CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.2 0.0 1.2	SW SW	1,092 1,400	29 1,735	80 0.1 - 0.0	\$ 53.18 \$ 17.90 \$ -	\$ 459.00 \$0 \$ 40.50 \$0 \$ - \$0	0	2.3	2.3 #DIV/0!
34 34	B127 CLRM B130 CLRM	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2 1.2	SW SW	1400 1400	1,735 1,735	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2	SW SW	1,400 1,400	1,735 1,735	- 0.0 - 0.0	\$ - \$ -	\$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0!
34 3 34	B129 CLRM Storage B-2 B132 CLRM	21	1T 32 C F 2 (ELE) W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F42ILL F41EE F42ILL	59 43 59	1.2 0.4 1.2	SW SW SW	1400 1040 1400	1,735 447 1,735	10 21	1T 32 C F 2 (ELE) W 28 W F 1 1T 32 C F 2 (ELE)	F42ILL F41SSILL F42ILL	26 59	1.2 0.3 1.2	SW SW SW	1,400 1,040 1,400	1,735 270 1,735	177 0.2 - 0.0	\$ 40.33 \$ -	\$ - \$0 \$ 1,890.00 \$0 \$ - \$0	0	46.9	#DIV/0! 46.9 #DIV/0!
34 34	B131 CLRM B134 CLRM B133 CLRM	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	1.2 1.2 1.2	SW SW SW	1400 1400 1400	1,735 1,735 1,735	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.2 1.2 1.2	SW SW	1,400 1,400 1,400	1,735 1,735 1,735		\$ - \$ -	\$ - \$0 \$ - \$0 \$	0		#DIV/0! #DIV/0! #DIV/0!
34 34 34	B132 A B132 B	4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL F41EE	59 59	0.2 0.2	SW	2600 2600	614 614	4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2	SW SW SW	2,600 2,600	614 614	- 0.0 - 0.0	\$ - \$ -	\$ - \$(\$ - \$(0		#DIV/0! #DIV/0!
3	Mens Staff Womens Staff Assistant Principal	1	W 34 W F 1 (MAG) W 34 W F 1 (MAG)	F41EE F41EE F42ILL	43 43 59	0.0 0.0 0.4	SW SW SW	360 360 2600	15 15	1	W 28 W F 1 W 28 W F 1	F41SSILL F41SSILL F42ILL	26 26 59	0.0 0.0 0.4	SW SW SW	360 360 2,600	9 9 920	6 0.0	\$ 2.27 \$ 2.27 \$ -		0	83.2 83.2	83.2 83.2 #DIV/0!
3 34 34 34 34	Offices 114A Assistant Principal	7 6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4 0.4	SW SW	2600 2600	920 1,074 920 578	7 6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4 0.4	SW SW	2,600 2,600	1,074 920 578	- 0.0	\$ -	\$ - \$(\$ - \$(0		#DIV/0! #DIV/0!
261 189	114B Library Library	7 8 16	1T 32 C F 2 (ELE) PAR 38 SP X 7.0 W 1	F42ILL H100/1 ECF7/1	59 100 10	0.4 0.8 0.2	SW SW SW	1400 1400 1400	578 1,120 224	7 8 16	1T 32 C F 2 (ELE) PAR 38 SP X 1.5C LED	F42ILL H100/1 ELED1.5/1	100 1.5	0.4 0.8 0.0	SW SW SW	1,400 1,400 1,400	578 1,120 34		\$ - \$ - \$ 39.72	\$ - \$0 \$ - \$0 \$ 2,052.00 \$0	0	51.7	#DIV/0! #DIV/0! 51.7
68LED 20LED	Library Library	9 50	175 MH WALL S 28 P F 1 (ELE)	MH175/1 F41ILL	215 31	1.9	SW SW	1400 1400	2,709 2,170	50	4 ft LED Tube	WPLED26 200732x1	30 15	0.3 0.8	SW SW	1,400 1,400	378 1,050	1,120 0.8	\$ 486.24 \$ 233.63	\$ 4,519.80 \$1 \$ 7,260.00 \$2	1,350 250	9.3 31.1	6.5 30.0
34 34 35	Library 118 Comp Lab 117 empty rm	8 3	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	F42ILL F42ILL F43ILL/2	59 59 90	2.5 0.5 0.3	SW SW SW	1400 1400 1040	3,469 661 281	8 3	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	F42ILL F42ILL F43ILL/2	59 59 90	2.5 0.5 0.3	SW SW SW	1,400 1,400 1,040	3,469 661 281	- 0.0 - 0.0 - 0.0	\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0	<u> </u>	#DIV/0! #DIV/0! #DIV/0!
35 34	116 Storage Principal Office A-102	3	T 32 R F 3 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL	90 59	0.2 0.2	SW SW	1040 2600	187 460	2 3	T 32 R F 3 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL	90 59	0.2 0.2	SW SW	1,040 2,600	187 460	- 0.0 - 0.0	\$ - \$ -	S - S(0		#DIV/0! #DIV/0!
34 34 3	cont rm. Guidance Guidance	6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F42ILL F42ILL F41EE	59 59 43	0.4 0.4 0.0	SW SW SW	2600 2600 1040	920 920 45	6 1	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) W 28 W F 1 1T 32 C F 2 (ELE)	F42ILL F42ILL F41SSILL	59 26	0.4 0.4 0.0	SW SW SW	2,600 2,600 1,040	920 920 27	- 0.0	\$ - \$ - \$ 4.03	\$ - \$0 \$ - \$0 \$ 189.00 \$0	0	46.9	#DIV/0! #DIV/0! 46.9
3 34 34	Guidance Guidance Conference	2 2	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.1 0.1	SW SW SW	2600 2600	45 307 307 614	2	1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.1 0.1	SW	2,600 2,600	27 307 307 614	- 0.0 - 0.0	\$ - \$ -	\$ - \$(\$ - \$(0		#DIV/0! #DIV/0!
34 3 3 34	Conference Hallway Conference kitchenet		W 34 W F 1 (MAG) W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F41EE F41EE	43 43	0.2 0.1 0.1	SW SW	2600 2600 1092	614 224 94	2 2	1T 32 C F 2 (ELE) W 28 W F 1 W 28 W F 1 1T 32 C F 2 (ELE)	F41SSILL F41SSILL	26 26	0.2 0.1 0.1	SW SW SW	2,600 2,600 1,092	614 135 57 614	88 0.0 37 0.0	\$ 16.14 \$ 8.33			23.4 45.4	#DIV/0! 23.4 45.4
34 34 34	Conference Copy Rm General Office Councel Office	12 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	0.2 0.7 0.2	SW SW SW	2600 1400 2600	94 614 991 614	12 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59 59	0.2 0.7 0.2	SW SW SW	2,600 1,400 2,600	614 991 614	- 0.0	\$ - \$ -	\$ - \$0 \$ - \$0 \$ - \$0	0		#DIV/0! #DIV/0! #DIV/0!
65 65	Mens Rm Womens Rm	1 1	I 100 I 100	I100/1 I100/1	100 100	0.1 0.1	SW SW	3120 3120	312 312	1 1	CF 26 CF 26	CFQ26/1-L CFQ26/1-L	27 27	0.0	SW SW	3,120 3,120	84 84	228 0.1 228 0.1	\$ 40.44 \$ 40.44	\$ 40.50 \$0 \$ 40.50 \$0	0	1.0 1.0	1.0 1.0
34 20LED 20LED	Entrance Way Entrance Way Waiting Area	2 3 6	1T 32 C F 2 (ELE) S 28 P F 1 (ELE) S 28 P F 1 (ELE)	F42ILL F41ILL F41ILL	59 31 31	0.1 0.1 0.2	SW SW SW	2600 2600 2600	307 242 484	2 3 6	1T 32 C F 2 (ELE) 4 ft LED Tube 4 ft LED Tube	F42ILL 200732x1 200732x1	15 15	0.1 0.0 0.1	SW SW SW	2,600 2,600 2,600	307 117 234	125 0.0	\$ - \$ 22.79 \$ 45.58		15 30	19.1 19.1	#DIV/0! 18.5 18.5
ZULED	vvalung Area	1 6	0 20 F F 1 (ELE)	r41ILL	. 31	0.2	οW	2000	484	, в	I+ILCU TUDE	200732X1	115	U.1	ı SW	∠,600	234	250 [0.1	1φ 45.58	a 8/1.20 \$	ου	19.1	18.5

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Part			EXISTING CONDI	ITIONS							RETROFIT C	ONDITIONS	_	_	_				COST & SAVIN	GS ANALYSIS		Simple Baubash	
The second of the content of the c	Area Description	No. of Fixtures Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	I Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code		kW/Space		Annual Hour	rs Annual kWh		Annual kW Saved	Annual \$ Saved	Retrofit Cost	NJ Smart Start	With Out Incentive	Simple Pav
Part		m No. of fixtures "Lighting Fixture Code" Example 21		Value from	(Watts/Fixt) * (Fixt			(kW/space) *	No. of fixtures after	"Lighting Fixture Code" Example	Code from Table of	Value from	(Watts/Fixt) *	Retrofit contro	ol Estimated	(kW/space) *					Prescriptive	Length of time	Length of tir
Column	ame: Floor number (if applicable)	lamps U shape	Fixture wattages	Standard	No.)	control device		(Annual Hours)	the retrofit	Recess. Floor 2 lamps U shape		Standard		device	for the usage	(Annuai Hours)			(\$/KWN)			for renovations cost to be recovered	renovations be recov
Column	Making Assa	0 700 0 50 (515)	E40H L/O	Wattages	0.7	CIM	2000	4.07	2 0	T 00 D E 0 (ELE)	E40II I 10	Wattages	0.7	CIM	ļ .	4.070		0.0			60	recovered	#DIV
April	Elec Rm	0 1 32 K F 3 (ELE) 2 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL	59	0.1	SW	1092	129	9 2	1T 32 C F 2 (ELE)	F42ILL	59	0.1	SW	1,092	129		0.0	\$ -	\$ -	\$0		#DI
## 15 16 16 16 16 16 16 16		7 T 32 R F 3 (ELE) 12 T 32 R F 3 (ELE)		90		SW				T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2	90		SW		1,512	2 .	- 0.0	\$ -	\$ -	\$0		#DI
Part		12 T 32 R F 3 (ELE)	F43ILL/2	90		SW	1400			T 32 R F 3 (ELE)	F43ILL/2	90		SW	1,400		2 .	- 0.0	\$ -	\$ -	\$0		#DI #DI
March 10 1747 1	Rm 156	12 T 32 R F 3 (ELE)	F43ILL/2	90		SW	1400	1,512		T 32 R F 3 (ELE)	F43ILL/2	90		SW	1,400			- 0.0	\$ -	\$ -	\$0		#D
Marke Province Pro				90	1.1	SW			3 12 6 16			90	1.1	SW		1,123	3 -	- 0.0	\$ - \$ -	\$ - \$ -	\$0 \$0		#D
Column C	Rm 155	17 T 32 R F 3 (ELE)	F43ILL/2	90	1.5	SW	1400	2,142	2 17	T 32 R F 3 (ELE)	F43ILL/2	90	1.5	SW	1,400	2,142	2	- 0.0	\$ -	\$ -	\$0		#[
The column 1		6 1 32 R F 3 (ELE) 2 1T 32 C F 2 (ELE)	F42ILL	59			1040	123			F42ILL	59						- 0.0	\$ -	\$ -	\$0		#0
The Control 1	Storage C1		F42ILL	59	0.1	SW		123				59	0.1	SW		123	380	0.0	\$ -	\$ -	\$0 \$0	1.2	#[
March Marc	Gym	50 High Bay MH 250					2964		9 50	FXLED78	FXLED78/1	78	3.9		2,964	11,560	32,159	10.9	\$ 5,752.67	\$ 42,209.78	\$7,500	7.3	
March Marc		11 W 32 W F 1 5 I 100	F41LL I100/1	100	0.4	SW	2600 1092	915	5 11 6 5			15	0.2	SW		429 147	9 486	0.2	\$ 88.78			10.1	-
Series of Part 1 190	Boys Locker - Restroom		F41LL	32	0.1			200	0 2	4 ft LED Tube	200732x1	15		SW	3,120	94	1 106	0.0	\$ 18.83	\$ 163.35	\$10	8.7 0.2	
Control Control Control Control Control Control Control		3 1100	1100/1		0.3	SW	1040	312		CF 26	CFQ26/1-L	27		SW	1,040	84	228	0.2	\$ 51.95	\$ 121.50	\$0	2.3	
## September 1			F41LL I100/1	32 100			2600 1092	915		4 ft LED Tube CF 26		15	0.2	SW		429 147	9 486	0.2	\$ 88.78 \$ 89.48	\$ 898.43 \$ 202.50		10.1	-
Service Control of Programs Pro	Girls Locker - Restroom	2 W 32 W F 1	F41LL		0.1	SW		200		4 ft LED Tube	200732x1	15	0.0	SW	3,120	94	1 106	0.0	\$ 18.83	\$ 163.35	\$10	8.7	
Market 9 1 10 10 10 10 10 10 10 10 10 10 10 10 1		3 1100	I100/1	100	0.8	SW	1040	312	2 3	CF 26		27	0.1	SW		84						2.3	
March 1	Faculty Rm			59 75	0.5	SW	1400	661				59	0.5	SW	1,400			- 0.0	\$ -	\$ -	\$0		#0
AND STATE OF STATES AND STATES AN	Womens Rm	2 175		75	0.2	SW		468	8 2	CF 26	CFQ26/1-L	27	0.1	SW	3,120	168		0.1	\$ 53.18	\$ 10.80	\$0	0.2 0.2	
A		36 1T 32 C F 2 (ELE) 12 1T 32 C F 2 (ELE)	F42ILL	59 59	2.1 0.7	SW			4 36 1 12	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)		59 59	2.1 0.7					- 0.0 - 0.0	\$ - \$ -	\$ - \$ -	\$0 \$0		#
Column Part	A-108	23 1T 32 C F 2 (ELE)	F42ILL	59		SW	1400	1,900			F42ILL	59	1.4	Breaker	1,400	1,900		0.0	\$ -	\$ -	\$0		#
A THE COLOR OF THE	A-109 Art Storage	2 W 32 W F 1	F41LL	32	0.1	SW	1040	67	7 2	4 ft LED Tube	200732x1	15	0.0		1,040	31	35	5 0.0	\$ 8.07	\$ 163.35	\$10	20.3	
ATTIME OF COLORS		24 1T 32 C F 2 (ELE) 1 T 32 R F 2 (ELF)	F42ILL F42LI	59 60		SW	1400	1,982	2 24	1T 32 C F 2 (ELE)	F42ILL RTI FD38	59	1.4	SW	1,400		2 .	0.0	\$ -	\$ - \$ 236.25	\$0 \$10	45.3	#[
11	A-111	24 1T 32 C F 2 (ELE)	F42ILL	59	1.4	SW	1400	1,982				59	1.4	SW	1,400			- 0.0	\$ -	\$ -	\$0		#
The color of the		27 1T 32 C F 2 (ELE)	F42LL F42ILL	59	1.6	SW		2,230	0 27	1T 32 C F 2 (ELE)	F42ILL	59	1.6	SW		2,230) 23	- 0.0	\$ 5.22	\$ 236.25	\$10	45.3	#[
Machin I 19577955 755. Ma		27 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL F42II I	59 59	1.6	SW	1400 2600	2,230	0 27 4 4	1T 32 C F 2 (ELE)	F42ILL F42II I	59	1.6	SW	1,400	2,230		0.0	\$ - \$	\$ - \$ -	\$0		#0
Mache 4 1207-1201 15 15 15 15 15 15 15	Music Rms	4 1T 32 C F 2 (ELE)	F42ILL	59	0.2		2600	614	4 4	1T 32 C F 2 (ELE)	F42ILL	59	0.2	SW	2,600	614		- 0.0	\$ -	\$ -	\$0		#[
Modelmon 1 1174 C C FERT 1 10 10 10 10 10 10 10		4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL	59 59	0.2			614		1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)		59	0.2	SW				- 0.0	\$ -	\$ - \$ -	\$0 \$0		#[
## September 2 1991 1941	Music Rms	4 1T 32 C F 2 (ELE)	F42ILL	59	0.2	SW	2600	614	4 4	1T 32 C F 2 (ELE)	F42ILL	59	0.2	SW	2,600	614		- 0.0	\$ -	\$ -	\$0		#
General J. 1 124 154 154 154 154 154 155 154 155 155 15	Music Rms Music Rms	4 11 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL	59	0.2	SW	2600		4 4	1T 32 C F 2 (ELE)	F42ILL	59	0.2	SW	2,600	614		0.0	\$ -	\$ -	\$0		#[
Medigare 36 1731F4 Ed. 60 10 59 90 60 30 F410 110 97 90 20 20 50 50 50 50 50 50 50 50 50 50 50 50 50	Boys Restroom	2 T 32 R F 2 (ELE) 2 T 32 R F 2 (FLF)		60				374	4 2			38				237						19.4 19.4	1
Depart 1987	Aud Stage	26 T 32 R F 2 (ELE)	F42LL	60	1.6	SW	360	562	2 26	T 38 R LED	RTLED38	38	1.0	SW	360	356	3 206	0.6	\$ 76.46	\$ 6,142.50	\$260	80.3	7
March 3 Trigger 1 Tr		2 1150	1150/1	150	0.3	SW		12,94			CFQ26/1-L	27	0.1	SW		1,806						9.3 0.2	
Marcia	Nursing Nursing	1 175 2 T 32 R F 4 (F1 F)	175/1 F44II I	75 112	0.1	SW		105	5 1	CF 26	CFQ26/1-L F44SSII I	27	0.0	SW		38	67	0.0				0.4 30.3	
Manuscripton 1 12 R4 eff. 14 12 0.1 0.7 0.0 0.0 1 12 R4 eff. 12 14 15 15 15 15 15 15 15	Nursing	3 1T 32 C F 2 (ELE)	F42ILL		0.2			248		1T 32 C F 2 (ELE)	F42ILL	59	0.2	SW	1,400	248		- 0.0	\$ -	\$ -	\$0		#[
Cylindric 72	Nursing - Restroom Nursing - Restroom	1 T 32 R F 2 (ELE) 1 T 32 R F 4 (ELE)		112	0.1	SW	360 360	40	2 1 0 1			38 96	0.0	SW		35	5 6	0.0 6 0.0	\$ 2.94 \$ 2.14			80.3 66.3	7
Cohesen 6 SECUTOF 4 Fight 61 04 500 100 512 6 BEDTOF 4 Fight 61 04 500 1,00 120	Cafeteria	72 1T 32 C F 2 (ELE)	F42ILL		4.2	SW	1400	5,947	7 72	1T 32 C F 2 (ELE)		59	4.2	SW	1,400		7	- 0.0	\$ -	\$ -	\$0	15.8	#[
Mode 2	Cafeteria			61	0.4						F24ILL	61		SW	1,400		2	- 0.0	\$ -	\$ -	\$0		#0
Final Profession 1		11 175 23 1T 32 C F 2 (FLF)	175/1 F42II I	75 59	0.8	SW		1,158	5 11	CF 26		59	0.3	SW		1 900		0.5	\$ 154.20	\$ 59.40	\$0	0.4	#[
Storage - searced 4 T32 F2 (ELE)	Kitchen	3 T 32 R F 2 (ELE)	F42LL		0.2		1400	252			RTLED38	38		SW	1,400		92					36.8	3
Recovery 4 100	Storage - assumed		F42LL F42LL	60	0.6	SW		250	0 10		RTLED38	38	0.4	SW	1,400	158	3 92	2 0.1				36.8 45.3	1
Received 2 S2 PET SEED	Receiving	4 1100	I100/1				2600	1,040	0 4	CF 26	CFQ26/1-L	27	0.1	SW	2,600	281	759	0.3	\$ 138.63	\$ 162.00	\$0	1.2 9.7	
14 Wood 6 173 CF 2 (ELE) F 2 (LL 99 0.4 SW 1400 486 6 173 CF 2 (ELE) F 2 (LL 99 0.4 SW 1,400 486 .0 0.5 S . S . D . D . D . D . D . D . D . D .	Receiving	2 S 28 P F 1 (ELE)	F41ILL	31			2600	161	1 2	4 ft LED Tube	200732x1	15			2,600	78	83					19.1	
14 Wood 12 TT3CF2(ELE) F42LL 99 0.4 SW 1400 496 6 1T3CF2(ELE) F42LL 99 0.4 SW 1,400 496 1.00 \$. \$. \$. \$. \$. \$. \$. \$. \$.		25 1T 32 C F 2 (ELE) 14 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.5	SW	1400 1400	2,065	5 25 6 14	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)		59 59	1.5	SW		2,065	5 -	- 0.0	\$ - \$ -	\$ - \$ -	\$0 \$0		#
TIPE OUT 2 T 12 PEF 4 (ELE) F44LL 112 0.2 SW 1400 314 2 T 28 PEF 4 F45SBLL 98 0.2 SW 1.400 229	141 Wood	6 1T 32 C F 2 (ELE)	F42ILL	59	0.4	SW	1400		6 6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	SW	1,400			- 0.0	\$ -	\$ -	\$0		#
142 Finess Center - Storage 1 175 175 175 175 1.1 5 1791 75 0.1 5 1 1040 78 1 1 1 1 1 1 1 1 1	Time Out	2 T 32 R F 4 (ELE)	F44ILL	112	0.2	SW	1400		4 2	T 28 R F 4	F44SSILL	96	0.2	SW	1,400	269		5 0.0	\$ 9.35	\$ 283.50	\$0	30.3	
142 Firmess Center's Storage 2		30 1T 32 C F 2 (ELE)		59 75	1.8	SW		2,478	8 30			59	1.8	SW		2,478		0.0	\$ - \$ 1139	\$ -	\$0	0.5	#
Gifs 2 1173 CF 2 (ELE) F42ILL 59 0.1 SW 3120 388 2 173 CF 2 (ELE) F42ILL 59 0.1 SW 3.120 388 . 0.0 \$. \$. \$. \$ 0.0 \$ Rm C-5 3 173 CF 2 (ELE) F42ILL 59 0.2 SW 2,600 460 . 0.0 \$. \$. \$. \$ 0.0 \$ SI SIGNARY SI SI SIGNARY SI SI SIGNARY SI SI SIGNARY SI SI SIGNARY SI SI SI SIGNARY SI SI SI SIGNARY SI SI SI SI SI SI SI SI SIGNARY SI	142 Fitness Center - Storage	3 175		75	0.2	SW	1040	234	4 3	CF 26	CFQ26/1-L	27	0.1	SW	1,040	84	150	0.1	\$ 34.16	\$ 16.20	\$0	0.5 0.5	1
Gifs 2 1173 CF 2 (ELE) F 42 L 59			F42ILL	59 59	0.1			123	3 2 4 1	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)		59		SW				- 0.0	\$ -	\$ - \$ -	\$0 \$0		#
Storage 1 1 175 1751 75 0.1 SW 1040 78 1 0F26 CF026H-1 27 0.0 SW 1,040 28 50 0.0 \$ 1.139 \$ 5.40 \$0 Display 6 175 175 175 175 175 0.5 SW 2600 1,170 6 0F26 CF026H-1 27 0.2 SW 2,600 421 74 18 18 18 18 18 18 18 18 18 18 18 18 18	Boys	2 1T 32 C F 2 (ELE)	F42ILL	59	0.1	SW	3120	368	8 2	1T 32 C F 2 (ELE)		59	0.1	SW	3,120			0.0	\$ -	\$ -	\$0		#
Boys Rm	Rm C-5	3 1T 32 C F 2 (ELE)		59	0.2	SW	2600	460	0 3	1T 32 C F 2 (ELE)	F42ILL	59	0.1	SW		460		- 0.0	\$ -	\$ -	\$0		
Boys Rm			175/1 175/1	75 75		SW	1040 2600	1.170	8 1 0 6	CF 26 CF 26	CFQ26/1-L CFQ26/1-L	27	0.0	SW	1,040 2,600	421	3 50 749	0.0	\$ 11.39 \$ 136.73	\$ 5.40 \$ 32.40	\$0 \$0	0.5 0.2	+
Storage 1 W32WF1 F41L 32 0.0 SW 1040 33 1 41 (ED Tube 2007321 15 0.0 SW 1,040 16 18 0.0 \$ 4,03 \$ 81,68 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$	Boys Rm	4 W 32 W F 1	F41LL	32		SW		399	9 4	4 ft LED Tube	200732x1	15	0.1				212	0.1	\$ 37.67			8.7 8.7	
Storage 1 175 175 75 0.1 SW 1040 78 1 CF 26 CF026/14 27 0.0 SW 1,040 28 50 0.0 \$ 1.39 \$ 5.40 \$50 \$	Storage	1 W 32 W F 1	F41LL			SW	1040	396	3 1	4 ft LED Tube	200732x1	15	0.0	SW	1,040	187	3 18	0.0	\$ 4.03	\$ 81.68	\$5	20.3	
Boler Rm 7 EP1100 F1001 1001 100 0.7 SW 3000 2.100 7 CF 26 CF26EL 27 0.2 SW 3.000 567 1.53 0.5 \$ 27.73 \$ 141.75 \$0.0 \$ Stainway 2 6 1732 CF 2 (ELE)	Storage	1 175 6 1T 32 C F 2 /FLF\	175/1 F42II I	75 59		SW		78	8 1	CF 26	CFQ26/1-L	59	0.0	SW	1,040	28	50	0.0				0.5	
Stainway 6 1732 CF 2 (ELE) F42 LL 59 0.4 SW 2600 920 6 1732 CF 2 (ELE) F42 LL 59 0.4 SW 2,600 920 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ 0.0 \$ - \$ 0.0 \$ - \$ 0.0 \$ - \$ 0.0 \$	Boiler Rm	7 EP 100	I100/1		0.7	SW	3000		0 7	CF 26	CFQ26/1-L	27	0.2	SW	3,000			0.5	\$ 273.73	\$ 141.75	\$0	0.5	
Stairway 5 6 17 32 C F 2 (ELE) F42 L 59 0.4 SW 2600 920 6 17 32 C F 2 (ELE) F42 L 59 0.4 SW 2,600 920 - 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ - \$ 0.0 \$ - \$ 0.	Stairway 2 Stairway 3	6 1T 32 C F 2 (ELE) 6 1T 32 C F 2 (ELE)	F42ILL				2600 2600		0 6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59			2,600			- 0.0	\$ -	\$ - \$ -	\$0 \$0		1
Exherior 8 CF42/1 CF42/1-1 48 0.4 Breaker 2912 1,118 8 6BLMWLED 6BLMWLED 13 0.1 SW 2,912 303 815 0.3 \$ 14624 \$ 1.2960.0 \$50 Exherior 4 175 MH WALL MH175/1 215 0.9 Breaker 2912 2,504 4 WPLED26 WPLED26 30 0.1 SW 2,912 349 2,515 0.7 \$ 386.49 \$ 2,206.00 \$50 \$60 \$60 \$60 \$60 \$60 \$60 \$60 \$60 \$60 \$6	Stairway 4	6 1T 32 C F 2 (ELE)	F42ILL	59	0.4	SW	2600	920	0 6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	SW	2,600	920) .	- 0.0	\$ -	\$ -	\$0		#
Exterior 4 175 MH WALL MH175/1 215 0.9 Breaker 2912 2.504 4 WPLED26 WPLED26 30 0.1 SW 2.912 349 2.155 0.7 \$ 386.49 \$ 2.008.80 \$600	Stairway 5 Exterior	8 CF42/1	CF42/1-I	48			2600	1,118	8 8	6BLMWLED	6BLMWLED	13		SW	2,600		815		\$ 146.24	\$ 1,296.00	\$0	8.9	#
Fylerior 19 75 75 75 14 Breaker 2912 4150 10 CF26							2912		4 4	WPLED26 CF 26	WPLED26 CFQ26/1-L	30 27			2,912	349 1,494	2,155	0.7	\$ 386.49	\$ 2,008.80	\$600	5.2 0.2	
Exterior 19 175 175/1 75 1.4 Breaker 2912 4.150 19 CF 26 CF026/1-L 27 0.5 SW 2.912 1.494 2.656 0.9 \$ 476.32 \$ 102.60 \$0 \$ 24,400	E.Morios		113/1	13			1				OT QZQTT-L		0.5	311	2,012								(

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Field Code Uniqu	Area Description le description of the location - Room number/Room	No. of Fixtures		TING CONDITIONS	Watta nar			1	CONDITIONS				COST & SAVING	OF ANAL TOIS	NJ Smart Start	Simple Payback	
Field Code Uniqu	e description of the location - Room number/Room	No. of Fixtures															
Field Code Uniqu	e description of the location - Room number/Room	NO. OI FIXLUIES		Eisture Code	Watts per	I/W/Cnasa	kW/Cnasa	Retrofit	Annual Haura	Annual k\Mb	Annual kWh	Annual I/M Sayad	Annual & Cauad	Potrofit Coot	Lighting	With Out	Simple Bayback
Field Code Oniqu		No. of fixtures	Standard Fixture Code	Fixture Code Code from Table of Standard	Fixture Value from	kW/Space (Watts/Fixt) * (Fixt	kW/Space (Watts/Fixt) *	Control Retrofit contro	Annual Hours	Annual kWh (kW/space) *	Saved (Original Annual	Annual kW Saved (Original Annual	Annual \$ Saved (kW Saved) *	Retrofit Cost Cost for	Incentive	Incentive Length of time	Simple Payback Length of time for
	name: Floor number (if applicable)	before the retrofit	Lighting Fixture Code	Fixture Wattages	Table of	No.)	(Number of	device	annual hours	(Annual Hours)	kWh) - (Retrofit	kW) - (Retrofit	(\$/kWh)	renovations to		for renovations	renovations cost to
	· · · · · ·				Standard		Fixtures)		for the usage	ľ í	Annual kWh)	Annual kW)		lighting system		cost to be	be recovered
					Fixture Wattages				group							recovered	
202	Hallway 1st Fl	4	2T 17 R F 4 (ELE)	F24ILL	61	0.2	0.2	NONE	2600	634.4	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
20LED	Hallway 1st Fl Hallway 1st Fl	112 61	S 28 P F 1 (ELE) W 34 W F 1 (MAG)	F41ILL F41EE	31 43	3.5 2.6	3.5 2.6	NONE NONE	2600 2600	9,027.2 6,819.8	0.0	0.0	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	-	#DIV/0! #DIV/0!
3 34	Hallway 1st Fl	1	1T 32 C F 2 (ELE)	F41EE F42ILL	59	0.1	0.1	NONE	2600	153.4	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0! #DIV/0!
65	Hallway 1st Fl	1	I 100	I100/1	100	0.1	0.1	NONE	2600	260.0	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
35 262LED	Hallway 1st Fl Hallway 1st Fl	1 21	T 32 R F 3 (ELE)	F43ILL/2 CF42/1-I	90 48	0.1 1.0	0.1 1.0	NONE	2600 2600	234.0 2.620.8	0.0	0.0	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00		#DIV/0! #DIV/0!
39	Hallway 1st Fl	20	2' 17 W F 2 (ELE)	F22ILL	33	0.7	0.7	NONE	2600	1.716.0	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
34	Hallway 1st Fl	115	1T 32 C F 2 (ELE)	F42ILL	59	6.8	6.8	NONE	2600	17,641.0	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
5LED 20LED	Hallway 1st Fl	7 134	2T 32 R F 2 (u) (ELE) S 28 P F 1 (ELE)	FU2LL F41ILL	60	0.4 4.2	0.4 4.2	NONE NONE	2600 2600	1,092.0 10,800.4	0.0	0.0	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00		#DIV/0! #DIV/0!
3	Hallway 2nd Fl. Hallway 2nd Fl.	10	W 34 W F 1 (MAG)	F41ILL F41EE	43	0.4	0.4	NONE	2600	1.118.0	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
34	Hallway 2nd Fl.	6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	NONE	2600	920.4	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
39 28	Hallway 2nd Fl. Closet Janitors	11	2' 17 W F 2 (ELE) CR 40 C F 1 (MAG)	F22ILL FC16/1	33 35	0.4	0.4	NONE NONE	2600 1092	943.8 38.2	0.0	0.0	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	-	#DIV/0! #DIV/0!
34	Restroom Boys	3	1T 32 C F 2 (ELE)	F42ILL	59	0.0	0.0	NONE	3120	552.2	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
34	Restroom Girls	3	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	NONE	3120	552.2	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
35 39	CLRM 255 CLRM 255	15	T 32 R F 3 (ELE) 2' 17 W F 2 (ELE)	F43ILL/2 F22ILL	90	1.4 0.0	1.4 0.0	OCC	980 980	1,323.0 32.3	567.0 13.9	0.0	\$86.34 \$2.11	\$128.25 \$128.25	\$20.00 \$20.00	1.5 60.8	1.3 51.3
35	CLRM 255 CLRM 262	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.0	0.0	OCC	980	529.2	226.8	0.0	\$34.54	\$128.25	\$20.00	3.7	3.1
35	CLRM 253	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	OCC	980	1,323.0	567.0	0.0	\$86.34	\$128.25	\$20.00	1.5	1.3
5LED 35	CLRM 253 CLRM 251	1 16	2T 32 R F 2 (u) (ELE) T 32 R F 3 (ELE)	FU2LL F43ILL/2	60 90	0.1 1.4	0.1 1.4	OCC	980 980	58.8 1,411.2	25.2 604.8	0.0	\$3.84 \$92.10	\$128.25 \$128.25	\$20.00 \$20.00	33.4 1.4	28.2 1.2
35	CLRM 251 CLRM 260	6	T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.5	0.5	OCC	980	529.2	226.8	0.0	\$34.54	\$128.25	\$20.00	3.7	3.1
35	CLRM 258	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	OCC	980	529.2	226.8	0.0	\$34.54	\$128.25	\$20.00	3.7	3.1
35 35	CLRM 256 CLRM 254	12 12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.1	1.1	OCC	980 980	1,058.4 1.058.4	453.6 453.6	0.0	\$69.07 \$69.07	\$128.25 \$128.25	\$20.00 \$20.00	1.9 1.9	1.6 1.6
35	CLRM 252	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	OCC	980	1,058.4	453.6	0.0	\$69.07	\$128.25	\$20.00	1.9	1.6
35	CLRM 250	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	OCC	980	617.4	264.6	0.0	\$40.29	\$128.25	\$20.00	3.2	2.7
34 34	Storage C3 Storage C4	1	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1	0.1	OCC	1040 1040	61.4 61.4	0.0	0.0	\$0.00 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	-	#DIV/0! #DIV/0!
34	CLRM 235 B	12	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.7	0.7	OCC	980	693.8	297.4	0.0	\$45.28	\$128.25	\$20.00	2.8	#DIV/0!
34	Hallway	1	1T 32 C F 2 (ELE)	F42ILL	59	0.1	0.1	NONE	2600	153.4	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
34	CLRM 235 A 238	12 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.7 1.2	0.7 1.2	OCC	980 980	693.8 1,214.2	297.4 520.4	0.0	\$45.28 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	2.8 1.6	2.4
34	233	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34	266	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34 34	231 234	9 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.5 1.2	0.5 1.2	OCC	1040 980	552.2 1,214.2	0.0 520.4	0.0	\$0.00 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.6	#DIV/0! 1.4
34	229	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34	232	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34 34	227 230	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2	1.2	OCC	980 980	1,214.2 1,214.2	520.4 520.4	0.0	\$79.24 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.6 1.6	1.4 1.4
20LED	Restroom Boys	4	S 28 P F 1 (ELE)	F41ILL	31	0.1	0.1	OCC	3120	386.9	0.0	0.0	\$0.00	\$128.25	\$20.00	1.0	#DIV/0!
71	Closet Janitors	1	160	160/1	60	0.1	0.1	OCC	1456	87.4	-21.8	0.0	-\$3.33	\$128.25	\$20.00		-32.5
20LED 34	Restroom Girls 228	4 21	S 28 P F 1 (ELE)	F41ILL F42ILL	31 59	0.1 1.2	0.1 1.2	OCC	3120 980	386.9 1.214.2	0.0 520.4	0.0	\$0.00 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.6	#DIV/0! 1.4
11	226 Staff Launge	4	S 34 P F 2 (MAG)	F42EE	72	0.3	0.3	OCC	980	282.2	121.0	0.0	\$18.42	\$128.25	\$20.00	7.0	5.9
3	Mens	1	W 34 W F 1 (MAG)	F41EE	43	0.0	0.0	OCC	3120	134.2	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
93	Mens Womens	1 1	W 34 W F 1 (MAG)	I75/1 F41EE	75 43	0.1	0.1	OCC	3120 3120	234.0 134.2	0.0	0.0	\$0.00 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00		#DIV/0! #DIV/0!
93	Womens	1	175	175/1	75	0.1	0.1	OCC	3120	234.0	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34	B4	7	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	OCC	980	404.7	173.5	0.0	\$26.41	\$128.25	\$20.00	4.9	4.1
3 34	B4 225	21	W 34 W F 1 (MAG) 1T 32 C F 2 (ELE)	F41EE F42ILL	43 59	0.0	0.0	00C	980 980	42.1 1,214.2	18.1 520.4	0.0	\$2.75 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	46.6 1.6	39.4 1.4
34	224	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34 34	223 222	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2	1.2	OCC	980 980	1,214.2 1,214.2	520.4 520.4	0.0	\$79.24 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.6 1.6	1.4
3	Storage Storage	5	W 34 W F 1 (MAG)	F42ILL F41EE	43	0.2	0.2	OCC	1040	223.6	0.0	0.0	\$0.00	\$128.25	\$20.00	1.0	#DIV/0!
77	Storage	2	I 150	I150/1	150	0.3	0.3	OCC	1040	312.0	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34 34	CLRM 221 CLRM 220	24 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.4 1.2	1.4 1.2	OCC	980 980	1,387.7 1,214.2	594.7 520.4	0.0	\$90.56 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.4 1.6	1.2 1.4
5LED	Annex hallway	2	2T 32 R F 2 (U) (ELE)	F42ILL FU2LL	60	0.1	0.1	NONE	2600	312.0	0.0	0.0	\$0.00	\$0.00	\$0.00	1.0	#DIV/0!
18	Annex	7	T 32 R F 4 (ELE)	F44ILL	112	0.8	0.8	OCC	980	768.3	329.3	0.0	\$50.14	\$128.25	\$20.00	2.6	2.2
18 6	Office Restroom	1	T 32 R F 4 (ELE) T 34 R F 4 (MAG)	F44ILL F44EE	112 144	0.1	0.1	OCC	1500 360	168.0 51.8	123.2	0.0	\$18.76 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	6.8	5.8 #DIV/0!
169LED	Annex	4	WP 250 MH	MH250/1	295	1.2	1.2	OCC	980	1,156.4	495.6	0.0	\$75.47	\$128.25	\$20.00	1.7	1.4
68LED	Annex	8	175 MH WALL	MH175/1	215	1.7	1.7	OCC	980	1,685.6	722.4	0.0	\$110.00	\$128.25	\$20.00	1.2	1.0
34 34	B120 CLRM B121 CLRM	15 24	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.9	0.9	OCC	980 980	867.3 1.387.7	371.7 594.7	0.0	\$56.60 \$90.56	\$128.25 \$128.25	\$20.00 \$20.00	2.3 1.4	1.9 1.2
34	B121 CLRM B122A CLRM	8	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.5	0.5	OCC	980	462.6	198.2	0.0	\$30.19	\$128.25	\$20.00	4.2	3.6
34	B122B CLRM	8	1T 32 C F 2 (ELE)	F42ILL	59	0.5	0.5	OCC	980	462.6	198.2	0.0	\$30.19	\$128.25	\$20.00	4.2	3.6
34 34	B122 hallway B123 CLRM	1 24	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1 1.4	0.1 1.4	NONE OCC	2600 980	153.4 1,387.7	0.0 594.7	0.0	\$0.00 \$90.56	\$0.00 \$128.25	\$0.00 \$20.00	1.4	#DIV/0! 1.2
34	B123 CLRM B124 Computer Lab	21	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	1.4	1.4	OCC	980	1,387.7	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34	B125 CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34 11	B126 CLRM Restroom Boys	21 4	1T 32 C F 2 (ELE) S 34 P F 2 (MAG)	F42ILL F42EE	59 72	1.2 0.3	1.2 0.3	OCC	980 3120	1,214.2 898.6	520.4 0.0	0.0	\$79.24 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	1.6	1.4 #DIV/0!
11	Restroom Boys Restroom Girls	4	S 34 P F 2 (MAG)	F42EE F42EE	72	0.3	0.3	OCC	3120	898.6	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
65	Closet Janitors	1	I 100	I100/1	100	0.1	0.1	OCC	1456	145.6	-36.4	0.0	-\$5.54	\$128.25	\$20.00		-19.5
34	B128 CLRM B127 CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	000	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34 34	B137 CLRM B130 CLRM	21 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2	1.2	OCC	980 980	1,214.2 1,214.2	520.4 520.4	0.0	\$79.24 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.6 1.6	1.4 1.4
34	B129 CLRM		1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4

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			FYISTI	NG CONDITIONS				RETROFIT (CONDITIONS				COST & SAVING	SS ANALYSIS			
			Exion	ino constitution				1					COOT & CAVILL	SO ANAL TOIS	NJ Smart Start	Simple Payback	
	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	Lighting Incentive	With Out Incentive	Simple Payback
Field Code U	Unique description of the location - Room number/Room	No. of fixtures	Lighting Fixture Code	Code from Table of Standard	Value from	(Watts/Fixt) * (Fixt	(Watts/Fixt) *	Retrofit contro		(kW/space) *	(Original Annual	(Original Annual	(kW Saved) *	Cost for	incentive	Length of time	Length of time for
	name: Floor number (if applicable)	before the retrofit	:	Fixture Wattages	Table of	No.)	(Number of	device	annual hours	(Annual Hours)	kWh) - (Retrofit	kW) - (Retrofit	(\$/kWh)	renovations to		for renovations	renovations cost to
					Standard Fixture		Fixtures)		for the usage		Annual kWh)	Annual kW)		lighting system		cost to be recovered	be recovered
					Wattages				group							recovered	
3	Storage B-2	10	W 34 W F 1 (MAG)	F41EE	43	0.4	0.4	OCC	1040	447.2	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34 34	B132 CLRM B131 CLRM	21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2 1.2	1.2 1.2	OCC	980 980	1,214.2 1,214.2	520.4 520.4	0.0	\$79.24 \$79.24	\$128.25 \$128.25	\$20.00 \$20.00	1.6 1.6	1.4
34	B134 CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	OCC	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34	B133 CLRM	21	1T 32 C F 2 (ELE)	F42ILL	59	1.2	1.2	000	980	1,214.2	520.4	0.0	\$79.24	\$128.25	\$20.00	1.6	1.4
34 34	B132 A B132 B	4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2	0.2	OCC	1500 1500	354.0 354.0	259.6 259.6	0.0	\$39.53 \$39.53	\$128.25 \$128.25	\$20.00 \$20.00	3.2 3.2	2.7
3	Mens Staff	1	W 34 W F 1 (MAG)	F41EE	43	0.0	0.0	OCC	360	15.5	0.0	0.0	\$0.00	\$128.25	\$20.00	0.2	#DIV/0!
3	Womens Staff	1	W 34 W F 1 (MAG)	F41EE	43	0.0	0.0	000	360	15.5	0.0	0.0	\$0.00	\$128.25	\$20.00	2.2	#DIV/0!
34 34	Assistant Principal Offices	6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4	0.4	OCC	1500 1500	531.0 619.5	389.4 454.3	0.0	\$59.30 \$69.18	\$128.25 \$128.25	\$20.00 \$20.00	2.2 1.9	1.8 1.6
34	114A Assistant Principal	6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	OCC	1500	531.0	389.4	0.0	\$59.30	\$128.25	\$20.00	2.2	1.8
34	114B	7	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	OCC	980	404.7	173.5	0.0	\$26.41	\$128.25	\$20.00	4.9	4.1
261 189	Library Library	8 16	PAR 38 SP X 7.0 W 1	H100/1 ECF7/1	100	0.8 0.2	0.8	OCC	980 980	784.0 156.8	336.0 67.2	0.0	\$51.17 \$10.23	\$128.25 \$128.25	\$20.00 \$20.00	2.5 12.5	2.1 10.6
68LED	Library	9	175 MH WALL	MH175/1	215	1.9	1.9	OCC	980	1,896.3	812.7	0.0	\$123.76	\$128.25	\$20.00	1.0	0.9
20LED	Library	50	S 28 P F 1 (ELE)	F41ILL	31	1.6	1.6	OCC	980	1,519.0	651.0	0.0	\$99.13	\$128.25	\$20.00	1.3	1.1
34 34	Library 118 Comp Lab	42 8	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	2.5 0.5	2.5 0.5	OCC	980 980	2,428.4 462.6	1,040.8 198.2	0.0	\$158.48 \$30.19	\$128.25 \$128.25	\$20.00 \$20.00	0.8 4.2	0.7 3.6
35	117 empty rm	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	OCC	1040	280.8	0.0	0.0	\$0.00	\$128.25	\$20.00	7.4	#DIV/0!
35	116 Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	OCC	1040	187.2	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34	Principal Office A-102	3	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2	0.2	000	1500 1500	265.5	194.7	0.0	\$29.65 \$59.30	\$128.25	\$20.00	4.3	3.7
34 34	cont rm. Guidance	6	1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4	0.4	OCC	1500 1500	531.0 531.0	389.4 389.4	0.0	\$59.30 \$59.30	\$128.25 \$128.25	\$20.00 \$20.00	2.2	1.8 1.8
3	Guidance	1	W 34 W F 1 (MAG)	F41EE	43	0.0	0.0	OCC	1040	44.7	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34	Guidance	2	1T 32 C F 2 (ELE)	F42ILL	59	0.1	0.1	000	1500	177.0	129.8	0.0	\$19.77	\$128.25	\$20.00	6.5	5.5
34 34	Guidance Conference	2	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1 0.2	0.1	OCC	1500 1500	177.0 354.0	129.8 259.6	0.0	\$19.77 \$39.53	\$128.25 \$128.25	\$20.00 \$20.00	6.5 3.2	5.5 2.7
3	Conference Hallway	2	W 34 W F 1 (MAG)	F41EE	43	0.1	0.1	NONE	2600	223.6	0.0	0.0	\$0.00	\$0.00	\$0.00	5.2	#DIV/0!
3	Conference kitchenet	2	W 34 W F 1 (MAG)	F41EE	43	0.1	0.1	OCC	1456	125.2	-31.3	0.0	-\$4.77	\$128.25	\$20.00		-22.7
34 34	Conference Copy Rm General Office	4 12	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2	0.2	OCC	1500 980	354.0 693.8	259.6 297.4	0.0	\$39.53 \$45.28	\$128.25 \$128.25	\$20.00 \$20.00	3.2 2.8	2.7
34	Councel Office	4	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.2	0.2	OCC	1500	354.0	259.6	0.0	\$39.53	\$128.25	\$20.00	3.2	2.7
65	Mens Rm	1	I 100	I100/1	100	0.1	0.1	OCC	3120	312.0	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
65 34	Womens Rm	1 2	I 100 1T 32 C F 2 (ELE)	I100/1 F42ILL	100 59	0.1 0.1	0.1 0.1	OCC NONE	3120 2600	312.0 306.8	0.0	0.0	\$0.00 \$0.00	\$128.25	\$20.00		#DIV/0! #DIV/0!
20LED	Entrance Way Entrance Way	3	S 28 P F 1 (ELE)	F42ILL F41ILL	31	0.1	0.1	NONE	2600	241.8	0.0	0.0	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00		#DIV/0! #DIV/0!
20LED	Waiting Area	6	S 28 P F 1 (ELE)	F41ILL	31	0.2	0.2	NONE	2600	483.6	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
35	Waiting Area	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	0.7	NONE	2600	1,872.0	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
34 35	Elec Rm Rm 150	7	1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	F42ILL F43ILL/2	59 90	0.1 0.6	0.1	NONE	1092 980	128.9 617.4	0.0 264.6	0.0	\$0.00 \$40.29	\$0.00 \$128.25	\$0.00 \$20.00	3.2	#DIV/0! 2.7
35	Rm 152	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	OCC	980	1,058.4	453.6	0.0	\$69.07	\$128.25	\$20.00	1.9	1.6
35	Rm 151	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	OCC	980	1,058.4	453.6	0.0	\$69.07	\$128.25	\$20.00	1.9	1.6
35 35	Rm 154 Rm 156	12 12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.1	1.1	OCC	980 980	1,058.4 1,058.4	453.6 453.6	0.0	\$69.07 \$69.07	\$128.25 \$128.25	\$20.00 \$20.00	1.9 1.9	1.6 1.6
35	Prep Rm	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	OCC	1040	1,123.2	0.0	0.0	\$0.00	\$128.25	\$20.00	1.9	#DIV/0!
35	Rm 153	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	OCC	980	1,411.2	604.8	0.0	\$92.10	\$128.25	\$20.00	1.4	1.2
35	Rm 155 Prep Rm	17	T 32 R F 3 (ELE)	F43ILL/2	90	1.5	1.5	000	980	1,499.4	642.6 0.0	0.0	\$97.85 \$0.00	\$128.25	\$20.00	1.3	1.1
35 34	Storage C2	2	T 32 R F 3 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL	59	0.5 0.1	0.5 0.1	OCC	1040 1040	561.6 122.7	0.0	0.0	\$0.00	\$128.25 \$128.25	\$20.00 \$20.00		#DIV/0! #DIV/0!
34	Storage C1	2	1T 32 C F 2 (ELE)	F42ILL	59	0.1	0.1	OCC	1040	122.7	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
65	Custodian Office	2	I 100	I100/1	100	0.2	0.2	000	1500	300.0	220.0	0.0	\$33.50	\$128.25	\$20.00	3.8	3.2
9LED 105LED	Gym Boys Locker	50 11	High Bay MH 250 W 32 W F 1	MH250/1 F41LL	295 32	14.8	14.8	OCC NONE	1092 2600	16,107.0 915.2	27,612.0 0.0	0.0	\$4,204.67 \$0.00	\$128.25 \$0.00	\$20.00 \$0.00	0.0	0.0 #DIV/0!
65	Boys Locker - Shower	5	I 100	1100/1	100	0.5	0.5	OCC	1456	728.0	-182.0	0.0	-\$27.71	\$128.25	\$20.00		-3.9
105LED	Boys Locker - Restroom	2	W 32 W F 1	F41LL	32	0.1	0.1	000	3120	199.7	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
77 65	Boys Locker - Storage Boys Locker - Storage	3	I 150	I150/1 I100/1	150 100	0.6	0.6	OCC	1040 1040	624.0 312.0	0.0	0.0	\$0.00 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	+	#DIV/0! #DIV/0!
105LED	Girls Locker	11	W 32 W F 1	F41LL	32	0.4	0.4	NONE	2600	915.2	0.0	0.0	\$0.00	\$0.00	\$0.00	<u></u>	#DIV/0!
65	Girls Locker - Shower	5	1100	1100/1	100	0.5	0.5	OCC	1456	728.0	-182.0	0.0	-\$27.71	\$128.25	\$20.00		-3.9
105LED 77	Girls Locker - Restroom Girls Locker - Storage	2	W 32 W F 1	F41LL I150/1	32 150	0.1 0.6	0.1	00C 00C	3120 1040	199.7 624.0	0.0	0.0	\$0.00 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	 	#DIV/0! #DIV/0!
65	Girls Locker - Storage Girls Locker - Storage	3	I 100	1100/1	100	0.6	0.6	OCC	1040	312.0	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0! #DIV/0!
34	Faculty Rm	8	1T 32 C F 2 (ELE)	F42ILL	59	0.5	0.5	OCC	980	462.6	198.2	0.0	\$30.19	\$128.25	\$20.00	4.2	3.6
93	Mens Rm	2	175	175/1	75 76	0.2	0.2	000	3120	468.0	0.0	0.0	\$0.00	\$128.25	\$20.00	1	#DIV/0!
93 34	Womens Rm A-106	2 36	175 1T 32 C F 2 (ELE)	175/1 F42ILL	75 59	0.2 2.1	0.2 2.1	OCC	3120 980	468.0 2,081.5	0.0 892.1	0.0	\$0.00 \$135.84	\$128.25 \$128.25	\$20.00 \$20.00	0.9	#DIV/0! 0.8
34	A-107	12	1T 32 C F 2 (ELE)	F42ILL	59	0.7	0.7	OCC	980	693.8	297.4	0.0	\$45.28	\$128.25	\$20.00	2.8	2.4
34	A-108	23	1T 32 C F 2 (ELE)	F42ILL	59	1.4	1.4	OCC	980	1,329.9	569.9	0.0	\$86.79	\$128.25	\$20.00	1.5	1.2
34 105LED	A-109 Art A-109 Art Storage	26	1T 32 C F 2 (ELE) W 32 W F 1	F42ILL F41LL	59 32	1.5 0.1	1.5 0.1	OCC	980 1040	1,503.3 66.6	644.3 0.0	0.0	\$98.11 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	1.3	1.1 #DIV/0!
34	A-109 Art Storage A-110	24	1T 32 C F 2 (ELE)	F41LL F42ILL	59	1.4	1.4	OCC	980	1,387.7	594.7	0.0	\$90.56	\$128.25	\$20.00	1.4	1.2
40LED	A-110 Storage	1	T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	OCC	1040	62.4	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34 40LED	A-111 A-111 Storage	24	1T 32 C F 2 (ELE) T 32 R F 2 (ELE)	F42ILL F42LL	59 60	1.4	1.4 0.1	000	980 1040	1,387.7	594.7	0.0	\$90.56 \$0.00	\$128.25 \$128.25	\$20.00 \$20.00	1.4	1.2 #DIV/0!
40LED 34	A-111 Storage 113	27	17 32 C F 2 (ELE)	F42LL F42ILL	59	0.1 1.6	1.6	OCC	980	62.4 1.561.1	0.0 669.1	0.0	\$101.88	\$128.25 \$128.25	\$20.00	1.3	#DIV/0!
34	112	27	1T 32 C F 2 (ELE)	F42ILL	59	1.6	1.6	OCC	980	1,561.1	669.1	0.0	\$101.88	\$128.25	\$20.00	1.3	1.1
34	Office Music Para	4	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	OCC	1500	354.0	259.6	0.0	\$39.53	\$128.25	\$20.00	3.2	2.7
34 34	Music Rms Music Rms	4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2 0.2	0.2	OCC	1500 1500	354.0 354.0	259.6 259.6	0.0	\$39.53 \$39.53	\$128.25 \$128.25	\$20.00 \$20.00	3.2 3.2	2.7 2.7
34	Music Rms	4	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.2	0.2	OCC	1500	354.0	259.6	0.0	\$39.53	\$128.25	\$20.00	3.2	2.7
34	Music Rms	4	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	OCC	1500	354.0	259.6	0.0	\$39.53	\$128.25	\$20.00	3.2	2.7
34	Music Rms	4	1T 32 C F 2 (ELE)	F42ILL	59 50	0.2	0.2	000	1500	354.0	259.6	0.0	\$39.53	\$128.25	\$20.00	3.2	2.7
34	Music Rms	4	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	OCC	1500	354.0	259.6	0.0	\$39.53	\$128.25	\$20.00	3.2	2.1

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			EXIS ⁻	TING CONDITIONS				RETROFIT	CONDITIONS				COST & SAVING	S ANALYSIS			
															NJ Smart Star	Simple Payback	
	Anna Parastaria	No. of Fig. 1	000 100 150 4 00 00 10	F 4 11 01 11	Watts per	1111/0	114//0	Retrofit	1		Annual kWh			Date of Cont	Lighting	With Out	Cincil Bullion
F:	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Fixture	kW/Space	kW/Space	Control	Annual Hours		Saved		Annual \$ Saved		Incentive	Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room	No. of fixtures	Lighting Fixture Code	Code from Table of Standard	Value from Table of	(Watts/Fixt) * (Fixt	(Watts/Fixt) *	Retrofit contro device		(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit	(Original Annual kW) - (Retrofit	(kW Saved) * (\$/kWh)	Cost for		Length of time	Length of time for
	name: Floor number (if applicable)	before the retrofit		Fixture Wattages	Standard	NO.)	(Number of Fixtures)	device	annual hours	(Annual Hours)	Annual kWh)	Annual kW)	(\$/KVVN)	renovations to		for renovations cost to be	renovations cost to
					Fixture		Fixtures)		for the usage group		Annuai Kwn)	Annual KVV)		lighting system		recovered	be recovered
					Wattages				group							recovered	4
40LED	Boys Restroom	2	T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	OCC	3120	374.4	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
40LED	Girls Restroom	2	T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	OCC	3120	374.4	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
40LED	Aud Stage	26	T 32 R F 2 (ELE)	F42LL	60	1.6	1.6	OCC	360	561.6	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
68LED	Auditorium	43	175 MH WALL	MH175/1	215	9.2	9.2	OCC	980	9,060.1	3,882.9	0.0	\$591.28	\$128.25	\$20.00	0.2	0.2
77	Storage	2	I 150	I150/1	150	0.3	0.3	OCC	1040	312.0	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
93	Nursing	1	175	175/1	75	0.1	0.1	OCC	980	73.5	31.5	0.0	\$4.80	\$128.25	\$20.00	26.7	22.6
18	Nursing	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	0.2	OCC	980	219.5	94.1	0.0	\$14.33	\$128.25	\$20.00	9.0	7.6
34	Nursing	3	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	OCC	980	173.5	74.3	0.0	\$11.32	\$128.25	\$20.00	11.3	9.6
40LED 18	Nursing - Restroom Nursing - Restroom	1 1	T 32 R F 2 (ELE) T 32 R F 4 (ELE)	F42LL F44ILL	60	0.1	0.1	OCC	360	21.6 40.3	0.0	0.0	\$0.00 \$0.00	\$128.25 \$128.25	\$20.00		#DIV/0! #DIV/0!
18 34	Nursing - Restroom Cafeteria	72	1T 32 C F 2 (ELE)	F44ILL F42ILL	112 59	0.1 4.2	0.1 4.2	OCC	360	4.163.0	0.0 1.784.2	0.0	\$271.69	\$128.25 \$128.25	\$20.00 \$20.00	0.5	#DIV/0! 0.4
262LED	Cafeteria	24	CF42/1	F42ILL CF42/1-I	48	1.2	1.2	OCC	980 980	1.129.0	1,784.2 483.8	0.0	\$73.68	\$128.25	\$20.00	1.7	1.5
183	Cafeteria	6	BED 17 C F 4	F24ILL	61	0.4	0.4	OCC	980	358.7	153.7	0.0	\$23.41	\$128.25	\$20.00	5.5	4.6
93	Kitchen	11	175	175/1	75	0.4	0.4	OCC	980	808.5	346.5	0.0	\$52.76	\$128.25	\$20.00	2.4	2.1
34	Kitchen	23	1T 32 C F 2 (ELE)	F42ILL	59	1.4	1.4	OCC	980	1.329.9	569.9	0.0	\$86.79	\$128.25	\$20.00	1.5	1.2
40LED	Kitchen	3	T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	OCC	980	176.4	75.6	0.0	\$11.51	\$128.25	\$20.00	11.1	9.4
40LED	Faculty Dinning	10	T 32 R F 2 (ELE)	F42LL	60	0.6	0.6	OCC	980	588.0	252.0	0.0	\$38.37	\$128.25	\$20.00	3.3	2.8
40LED	Storage - assumed	4	T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	OCC	1040	249.6	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
65	Receiving	4	I 100	I100/1	100	0.4	0.4	NONE	2600	1,040.0	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
262LED	Receiving	1	CF42/1	CF42/1-I	48	0.0	0.0	NONE	2600	124.8	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
20LED	Receiving	2	S 28 P F 1 (ELE)	F41ILL	31	0.1	0.1	NONE	2600	161.2	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
34	140	25	1T 32 C F 2 (ELE)	F42ILL	59	1.5	1.5	OCC	980	1,445.5	619.5	0.0	\$94.34	\$128.25	\$20.00	1.4	1.1
34	141 Wood	14	1T 32 C F 2 (ELE)	F42ILL	59	0.8	0.8	OCC	980	809.5	346.9	0.0	\$52.83	\$128.25	\$20.00	2.4	2.0
34	141 Wood	6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	OCC	980	346.9	148.7	0.0	\$22.64	\$128.25	\$20.00	5.7	4.8
34	141 Wood	12	1T 32 C F 2 (ELE)	F42ILL	59	0.7	0.7	OCC	980	693.8	297.4	0.0	\$45.28	\$128.25	\$20.00	2.8	2.4
18 34	Time Out 142 Fitness Center	30	T 32 R F 4 (ELE) 1T 32 C F 2 (ELE)	F44ILL F42ILL	112 59	0.2 1.8	0.2 1.8	000	980 980	219.5 1,734.6	94.1 743.4	0.0	\$14.33 \$113.20	\$128.25 \$128.25	\$20.00 \$20.00	9.0	7.6 1.0
93	142 Fitness Center 142 Fitness Center - Storage	30		175/1	_	0.1			1040	78.0	0.0	0.0	\$0.00			1.1	#DIV/0!
93	142 Fitness Center - Storage	3	175 175	175/1	75 75	0.1	0.1	00C	1040	234.0	0.0	0.0	\$0.00	\$128.25 \$128.25	\$20.00 \$20.00	-	#DIV/0! #DIV/0!
34	142 Fitness Center - Storage	2	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	OCC	1040	122.7	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34	Closet Janitor	1	1T 32 C F 2 (ELE)	F42ILL	59	0.1	0.1	OCC	1456	85.9	-21.5	0.0	-\$3.27	\$128.25	\$20.00	+	-33.1
34	Boys	2	1T 32 C F 2 (ELE)	F42ILL	59	0.1	0.1	OCC	3120	368.2	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34	Girls	2	1T 32 C F 2 (ELE)	F42ILL	59	0.1	0.1	OCC	3120	368.2	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
34	Rm C-5	3	1T 32 C F 2 (ELE)	F42ILL	59	0.2	0.2	OCC	1500	265.5	194.7	0.0	\$29.65	\$128.25	\$20.00	4.3	3.7
93	Storage	1	175	175/1	75	0.1	0.1	OCC	1040	78.0	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
93	Display	6	175	175/1	75	0.5	0.5	OCC	1092	491.4	678.6	0.0	\$103.34	\$128.25	\$20.00	1.2	1.0
105LED	Boys Rm		W 32 W F 1	F41LL	32	0.1	0.1	OCC	3120	399.4	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
105LED	Girls Rm	4	W 32 W F 1	F41LL	32	0.1	0.1	OCC	3120	399.4	0.0	0.0	\$0.00	\$128.25	\$20.00	1	#DIV/0!
105LED	Storage	1	W 32 W F 1	F41LL	32	0.0	0.0	OCC	1040	33.3	0.0	0.0	\$0.00	\$128.25	\$20.00		#DIV/0!
93	Storage	1 1	175	175/1	75	0.1	0.1	OCC	1040	78.0	0.0	0.0	\$0.00	\$128.25	\$20.00	+	#DIV/0!
34	Stairway 1 Boiler Rm	6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	NONE	2600	920.4	0.0	0.0	\$0.00	\$0.00	\$0.00	+	#DIV/0!
78 34	Stairway 2	6	EP I 100 1T 32 C F 2 (ELE)	I100/1 F42ILL	100 59	0.7	0.7	OCC NONE	3000 2600	2,100.0 920.4	0.0	0.0	\$0.00 \$0.00	\$128.25 \$0.00	\$20.00 \$0.00	+	#DIV/0! #DIV/0!
34	Stairway 2 Stairway 3	6	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.4	0.4	NONE	2600	920.4	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0! #DIV/0!
34	Stairway 3 Stairway 4	6	1T 32 C F 2 (ELE)	F42ILL F42ILL	59	0.4	0.4	NONE	2600	920.4	0.0	0.0	\$0.00	\$0.00	\$0.00	+	#DIV/0!
34	Stairway 5	6	1T 32 C F 2 (ELE)	F42ILL	59	0.4	0.4	NONE	2600	920.4	0.0	0.0	\$0.00	\$0.00	\$0.00	+	#DIV/0!
262LED	Exterior	8	CF42/1	CF42/1-I	48	0.4	0.4	PHC	5000	1.920.0	-801.8	0.0	-\$122.09	\$0.00	\$0.00	+	0.0
68LED	Exterior	4	175 MH WALL	MH175/1	215	0.9	0.9	PHC	5000	4,300.0	-1,795.7	0.0	-\$273.44	\$0.00	\$0.00		0.0
93	Exterior	19	175	175/1	75	1.4	1.4	PHC	5000	7,125.0	-2,975.4	0.0	-\$453.09	\$0.00	\$0.00		0.0
								0	#N/A	#VALUE!	#VALUE!	#N/A	#VALUE!			#VALUE!	#VALUE!
T	Total	2,490			1	167.7	167.7	T .	1	227,624.66	72,493.09	0.0	11039.0	22828.5	3560.0		1
-										Deman	nd Savings		0.0	\$0			T

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											CONDITIONS							OST & SAVING		NJ Smart Start	Simple Paybact	k
	Area Description	No. of Fixtures Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control Annual I	ours Annual kWh	Number of Fixture	es Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved Ann	ual \$ Saved	Retrofit Cost	Lighting Incentive	With Out Incentive	Simple Pay
Jnique	e description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures Lighting Fixture Code before the retrofit	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture	(Watts/Fixt) * (F No.)	ixt Pre-inst. Estimated control device usage group	ne (Annual Hours)	No. of fixtures afte the retrofit	r Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture	(Watts/Fixt) * (Number of Fixtures)	device	annual hours for the usage	(kW/space) * (Annual Hours)	kWh) - (Retrofit k	Original Annual (kWh kW) - (Retrofit Annual kW)	'h) r	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of ti
	Hallway 1st Fl Hallway 1st Fl	4 2T 17 R F 4 (ELE) 112 S 28 P F 1 (FLF)	F24ILL F41ILL	Wattages	61 0.2	SW SW	2600 6 2600 9.0	34 4	2T 17 R F 4 (ELE) 4 ft LED Tube	F24ILL	Wattages 61	0.2	NONE NONE	2,600 2,600	634 4,368	- 0 4,659 1	1.0 \$	- 850.70	\$ -	\$ -	recovered	10.5
	Hallway 1st FI Hallway 1st FI	61 W 34 W F 1 (MAG) 1 1T 32 C F 2 (ELE)	F41EE F42ILL		43 2.6 59 0.1	SW SW	2600 6.8 2600 1	20 61 53 1	W 28 W F 1 1T 32 C F 2 (ELE)	F41SSILL F42ILL	26 59	1.6 0.1	NONE NONE	2,600 2,600	4,124 153	2,696 1	in le	850.79 492.34	\$ 16,262.40 \$ 11,529.00 \$ -	\$ -	23.4	23.4
	Hallway 1st FI Hallway 1st FI	1 I 100 1 T 32 R F 3 (ELE)	I100/1 F43ILL/2	1	00 0.1	SW SW	2600 2 2600 2	60 1 34 1	CF 26 T 32 R F 3 (ELE)	CFQ26/1-L F43ILL/2	27 90	0.0	NONE NONE	2,600 2,600	70 234	190 0	0.1 \$	34.66	\$ 40.50 \$ -	\$ -	1.2	1.2
	Hallway 1st FI Hallway 1st FI	21 CF42/1 20 2: 17 W F 2 (ELE)	CF42/1-I F22ILL		48 1.0 33 0.7	SW SW	2600 2,6	21 21	6BLMWLED 2' 17 W F 2 (ELE)	6BLMWLED F22ILL	13 33	0.3	NONE NONE	2,600 2,600	710	1,911 0	1.7 \$	348.96	\$ 3,402.00 \$	\$ - \$ -	9.7	9.7
	Hallway 1st FI Hallway 1st FI	115 1T 32 C F 2 (ELE) 7 2T 32 R F 2 (u) (ELE)	F42ILL FU2LL		59 6.8 60 0.4	SW SW	2600 17,6 2600 1,0	41 115	1T 32 C F 2 (ELE) 2T XX R LED	F42ILL 2RTLED	59 25	6.8 0.2	NONE NONE	2,600 2,600	17,641 455	- 0 637 0	1.0 \$	116.32	\$ - \$ 1.417.50	\$ - \$ 70	12.2	11.
	Hallway 2nd Fl. Hallway 2nd Fl.	134 S 28 P F 1 (ELE) 10 W 34 W F 1 (MAG)	F41ILL F41EE		31 4.2 43 0.4	SW SW	2600 10,8		4 ft LED Tube W 28 W F 1	200732x1 F41SSILL	15 26	2.0 0.3	NONE NONE	2,600 2,600	5,226 676	5,574 2 442 0		1,017.91 80.71				18 23
	Hallway 2nd Fl. Hallway 2nd Fl.	6 1T 32 C F 2 (ELE) 11 2' 17 W F 2 (ELE)	F42ILL F22ILL		59 0.4 33 0.4	SW SW	2600 9	120 6 144 11	1T 32 C F 2 (ELE) 2' 17 W F 2 (ELE)	F42ILL F22ILL	59 33	0.4 0.4	NONE NONE	2,600 2,600	920 944	- 0 - 0	1.0 \$ 1.0 \$	-	\$ - \$ -	\$ -		1
	Closet Janitors Restroom Boys	1 CR 40 C F 1 (MAG) 3 1T 32 C F 2 (ELE) 3 1T 32 C F 2 (ELE)	FC16/1 F42ILL		35 0.0 59 0.2	SW SW		38 1 52 3	CR 40 C F 1 (MAG) 1T 32 C F 2 (ELE)	FC16/1 F42ILL	35 59	0.0 0.2	NONE NONE	1,092 3,120	38 552	- 0	0.0 \$ 0.0 \$	- :	\$ - \$ -	\$ - \$ -		+
	Restroom Girls CLRM 255	15 T 32 R F 3 (ELE)	F42ILL F43ILL/2		59 0.2 90 1.4	SW SW	1400 1,8	52 3 190 15	1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	F42ILL F43ILL/2	59 90	0.2 1.4	NONE OCC	3,120 980	552 1,323	- 0 567 0	0.0 \$ 0.0 \$	86.34	\$ - \$ 128.25		1.5	1
	CLRM 255 CLRM 262	1 2' 17 W F 2 (ELE) 6 T 32 R F 3 (ELE)	F22ILL F43ILL/2		33 0.0 90 0.5	SW SW	1400 7	46 1 '56 6	2' 17 W F 2 (ELE) T 32 R F 3 (ELE)	F22ILL F43ILL/2	33 90	0.0 0.5	000	980 980	32 529	14 0 227 0 567 0	0.0 \$ 0.0 \$	2.11 34.54	\$ 128.25 \$ 128.25	\$ 20	60.8 3.7	51 3
	CLRM 253 CLRM 253	15 T 32 R F 3 (ELE) 1 2T 32 R F 2 (u) (ELE)	F43ILL/2 FU2LL		90 1.4 60 0.1	SW SW	1400	90 15 84 1	T 32 R F 3 (ELE) 2T XX R LED	F43ILL/2 2RTLED	90 25	1.4 0.0	OCC	980 980	1,323 25	567 0 60 0 605 0	1.0 \$ 1.0 \$	86.34 11.82	\$ 128.25 \$ 330.75	\$ 30	1.5 28.0	1. 25
	CLRM 251 CLRM 260	16 T 32 R F 3 (ELE) 6 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2		90 1.4 90 0.5	SW SW	1400 7	116 16 '56 6	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.4 0.5	OCC	980 980	1,411 529	227 0	0.0	92.10 34.54	\$ 128.25	\$ 20		1.
	CLRM 258 CLRM 256	6 T 32 R F 3 (ELE) 12 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2		90 0.5 90 1.1	SW SW	1400 7 1400 1,5	'56 6 i12 12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90 90	0.5 1.1	OCC	980 980	529 1,058	227 0 454 0 454 0	1.0 \$ 1.0 \$	34.54 69.07	\$ 128.25 \$ 128.25	\$ 20	3.7 1.9	3
	CLRM 254 CLRM 252	12 T 32 R F 3 (ELE) 12 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2		90 1.1	SW SW		12 12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.1	000	980 980	1,058	454 0	0.0	69.07 69.07		\$ 20	1.9	1.
	CLRM 250 Storage C3	7 T 32 R F 3 (ELE) 1 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL F42ILL		90 0.6 59 0.1	SW SW SW	1040	82 7 61 1 61 1	T 32 R F 3 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F43ILL/2 F42ILL F42ILL	59 50	0.6 0.1 0.1	000	1,040 1,040	617 61	265 0 - 0	1.0 \$	40.29	\$ 128.25 \$ 128.25 \$ 128.25	\$ 20	3.2	
	Storage C4 CLRM 235 B Hallway	1 1T 32 C F 2 (ELE) 12 1T 32 C F 2 (ELE) 1 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL		59 0.7	SW SW	1400 9	91 12	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL	59	0.1	OCC	980	694	297 0	1.0 \$	45.28			2.8	2
	CLRM 235 A	12 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 0.7	SW SW	1400 9	53 1 191 12 35 21	1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.1	NONE OCC	2,600 980	694 1,214	297 0		45.28			2.8 1.6	2
	238 233 366	12 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 1.2	SW SW	1400 1,7		1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.2	220	980	1,214 1,214 1,214	520 0 520 0 520 0		79.24 79.24 79.24	\$ 128.25	\$ 20	1.6 1.6	1
	266 231 234	21 1T 32 C F 2 (ELE) 9 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL		59 0.5 50 1.2	SW SW	1040 1,7 1040 5	35 21 52 9 35 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	0.5	220	1,040	552 1,214	- 0 520 0	1.0 \$	79.24	\$ 128.25 \$ 128.25	\$ 20	1.6	1
	229 232	21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 1.2	SW SW	1400 1,7	35 21 35 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59	1.2	220	980	1,214 1,214	520 0 520 0	1.0 \$	79.24	\$ 128.25	\$ 20	1.6	1
	227	21 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 1.2	SW	1400 1,7	35 21 35 21 35 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL	59 59	1.2	220	980	1,214	520 0 520 0	1.0 \$	79.24 79.24 79.24	\$ 128.25 \$ 128.25 \$ 128.25	\$ 20	1.6	1
	Restroom Boys Closet Janitors	21 1T 32 C F 2 (ELE) 4 S 28 P F 1 (ELE) 1 LEO	F41ILL I60/1		31 0.1	SW SW	3120 3	87 4 66 1	4 ft LED Tube CF 26	200732x1 CFQ26/1-L	15	0.1	000	3,120 1,456	187	200 0 26 0	1.1 \$	35.45 6.59	\$ 709.05	\$ 40	20.0 20.5	11
	Restroom Girls 228	4 S 28 P F 1 (ELE) 21 1T 32 C F 2 (ELE)	F41ILL F42ILL		31 0.1 59 1.2	SW SW	3120 3	187 4 135 21	4 ft LED Tube 1T 32 C F 2 (ELE)	200732x1 F42ILL	15 59	0.1 1.2	OCC	3,120	187 1,214	200 0 520 0	0.1 \$	35.45 79.24	\$ 709.05	\$ 40		11
	226 Staff Launge Mens	4 S 34 P F 2 (MAG) 1 W 34 W F 1 (MAG)	F42EE F41EE		72 0.3	SW SW	1400 4	03 4 34 1	C 28 P F 2 W 28 W F 1	F42SSILL F41SSILL	48	0.2	000	980 3,120	188	215 0		40.32 9.42		\$ 20	14.6	1-
	Mens Womens	1 175 1 W 34 W F 1 (MAG)	175/1 F41EE		75 0.1 43 0.0	SW SW	3120 2	34 1 34 1	CF 26 W 28 W F 1	CFQ26/1-L F41SSILL	27 26	0.0	OCC	3,120 3,120	84 81	150 0 53 0	1.0 \$	26.59 9.42	\$ 133.65	\$ 20	5.0 33.7	3
	Womens B4	1 175 7 1T 32 C F 2 (ELE)	175/1 F42ILL		75 0.1 59 0.4	SW SW		734 1 78 7	CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.0 0.4	OCC	3,120 980	84 405	150 0 173 0	1.0 \$	26.59 26.41	\$ 133.65	\$ 20	5.0 4.9	
	B4 225	1 W 34 W F 1 (MAG)	F41EE F42ILL		43 0.0 59 1.2	SW SW	1400	60 1 '35 21	W 28 W F 1 1T 32 C F 2 (ELE)	F41SSILL F42ILL	26 59	0.0	000	980 980	25 1,214	35 0	1.0 \$	6.63 79.24	\$ 317.25	\$ 20	47.9 1.6	4
	224 223	21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 1.2 59 1.2	SW SW	1400 1,7	'35 21 '35 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2 1.2	OCC	980 980	1,214 1,214	520 0	0.0	79.24 79.24	\$ 128.25	\$ 20	1.6 1.6	1
	222 Storage	21 1T 32 C F 2 (ELE) 5 W 34 W F 1 (MAG)	F42ILL F41EE		59 1.2 43 0.2	SW SW	1400 1,7	35 21 24 5	1T 32 C F 2 (ELE) W 28 W F 1	F42ILL F41SSILL	59 26	1.2 0.1	OCC	980 1,040	1,214 135	520 0 520 0 88 0	1.0 \$ 1.1 \$	79.24 20.16	\$ 128.25 \$ 1,073.25	\$ 20 \$ 20	1.6 53.2	5
	Storage CLRM 221	2 I 150 24 1T 32 C F 2 (ELE)	I150/1 F42ILL	1:	50 0.3 59 1.4	SW SW	1040 3 1400 1,9	112 2 182 24	CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.1 1.4	000	1,040 980	56 1,388	256 0 595 0		58.36 90.56	\$ 141.75 \$ 128.25	\$ 20	2.4 1.4	1
	CLRM 220 Annex hallway	21 1T 32 C F 2 (ELE) 2 2T 32 R F 2 (u) (ELE)	F42ILL FU2LL		59 1.2 60 0.1	SW SW	1400 1,7	35 21 112 2	1T 32 C F 2 (ELE) 2T XX R LED	F42ILL 2RTLED	59 25	1.2 0.1	OCC NONE	980 2,600	1,214 130	520 0 182 0		79.24 33.23	\$ 128.25	\$ 20	1.6 12.2	1
	Annex Office	7 T 32 R F 4 (ELE) 1 T 32 R F 4 (ELE)	F44ILL F44ILL	1 1	12 0.8 12 0.1	SW SW	1400 1,0	98 7 91 1	T 28 R F 4 T 28 R F 4	F44SSILL F44SSILL	96 96	0.7 0.1	00C	980 1,500	659 144	439 0 147 0).1 \$	75.69 23.68	\$ 1,120.50	\$ 20	14.8 11.4	1-
	Restroom Annex	1 T 34 R F 4 (MAG) 4 WP 250 MH	F44EE MH250/1	1-	44 0.1 95 1.2	SW SW		52 1 152 4	T 28 R F 4 FXLED78	F44SSILL FXLED78/1	96 78	0.1 0.3	000	360 980	35 306	17 0 1,346 0	1.0 \$	6.42 273.44			42.1 12.8	3
	Annex B120 CLRM	8 175 MH WALL 15 1T 32 C F 2 (ELE)	MH175/1 F42ILL	2	15 1.7 59 0.9	SW SW	1400 1,2	08 8 39 15	WPLED26 1T 32 C F 2 (ELE)	WPLED26 F42ILL	30 59	0.2 0.9	OCC	980 980	235 867	2,173 1 372 0 595 0	.5 \$ 1.0 \$	447.57 56.60	\$ 4,145.85 \$ 128.25	\$ 20	9.3 2.3	
	B121 CLRM B122A CLRM	24 11 32 G F 2 (ELE) 8 11 32 G F 2 (ELE) 8 11 32 G F 2 (ELE) 1 11 32 G F 2 (ELE)	F42ILL F42ILL		59 1.4 59 0.5	SW SW	1400 6	82 24 61 8	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.4 0.5	OCC	980 980	1,388 463	198 0	0.0	90.56 30.19	\$ 128.25	\$ 20	4.2	1 3
	B122B CLRM B122 hallway	8 1T 32 C F 2 (ELE) 1 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 0.5 59 0.1	SW SW	2600 1	61 8 53 1	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.5 0.1	OCC NONE	980 2,600	463 153	198 0	0.0	30.19	\$ 128.25 \$ -	\$ -		1
	B123 CLRM B124 Computer Lab	24 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 1.4 59 1.2	SW SW	1400 1,7	182 24 135 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.4	000	980 980	1,388 1,214	595 0 520 0	0.0	90.56 79.24	\$ 128.25	\$ 20	1.4	1
	B125 CLRM B126 CLRM	21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 1.2 59 1.2	SW SW	1400 1,7	35 21 35 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2 1.2	OCC	980 980	1,214 1,214	520 0 520 0 300 0	1.0 \$ 1.0 \$	79.24 79.24 53.18	\$ 128.25 \$ 128.25	\$ 20	1.6 1.6	1
	Restroom Boys Restroom Girls	4 S 34 P F 2 (MAG) 4 S 34 P F 2 (MAG)	F42EE F42EE		72 0.3 72 0.3	SW		99 4 199 4	C 28 P F 2 C 28 P F 2	F42SSILL F42SSILL	48	0.2	000	3,120 3,120	599 599	300 0		53.18			11.0 11.0	1
	Closet Janitors B128 CLRM	1 100 21 1T 32 C F 2 (ELE)	1100/1 F42ILL	11	59 1.2	SW SW		09 1 35 21	CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.0 1.2	000	1,456 980	39 1,214		1.1 \$	16.40 79.24			10.3 1.6 1.6	
	B127 CLRM B130 CLRM	21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE) 10 W 34 W F 1 (MAG)	F42ILL F42ILL		59 1.2	SW SW	1400 1,7	35 21 35 21	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.2	000	980	1,214 1,214	520 0 520 0 520 0	1.0 \$	79.24 79.24	\$ 128.25	\$ 20	1.6	
	B129 CLRM Storage B-2 B132 CLRM	21 1T 32 C F 2 (ELE) 10 W 34 W F 1 (MAG) 21 1T 32 C F 2 (ELE)	F42ILL F41EE F42ILL		59 1.2 43 0.4 59 1.2	SW SW SW	1040 4	35 21 147 10 35 21	1T 32 C F 2 (ELE) W 28 W F 1 1T 32 C F 2 (ELE)	F42ILL F41SSILL F42ILL	59 26 59	0.3 1.2	000	1,040 980	1,214 270 1,214	520 0 177 0 520 0		79.24 40.33 79.24	\$ 128.25 \$ 2,018.25 \$ 128.25	\$ 20	1.6 50.0 1.6	4
	B132 CLRM B131 CLRM B134 CLRM	21 1T 32 C F 2 (ELE)	F42ILL F42ILL F42ILL		59 1.2 59 1.2	SW SW	1400 1,7	35 21	1T 32 C F 2 (ELE)	F42ILL	59	1.2 1.2 1.2	000	980	1,214	520 0	0.0	79.24	\$ 128.25	\$ 20	1.6	
	B134 CLRM B133 CLRM B132 A	21 1T 32 C F 2 (ELE) 21 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (FLF)	F42ILL F42ILL F42ILL		59 1.2	SW SW	1400 1,7	35 21 35 21 14 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (FLE)	F42ILL F42ILL F42ILL	59 59 59	1.2	000	980 980	1,214 1,214 354	520 0 520 0 260 0	1.0 \$	79.24 79.24 39.53	\$ 128.25 \$ 128.25 \$ 128.25	\$ 20	1.6	
	B132 A B132 B Mens Staff	4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE) 1 W 34 W F 1 (MAG)	F42ILL F42ILL F41EE		59 0.2 43 0.0	SW SW	2600 6 360 6	114 4 115 1	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) W 28 W F 1	F42ILL F42ILL F41SSILL	59 59 26	0.2 0.2 0.0	000	1,500 1,500 360	354 354 9	260 U	1.0 \$	39.53 39.53 2.27	\$ 128.25 \$ 128.25 \$ 317.25	\$ 20	3.2 3.2 139.6	1
	Womens Staff Assistant Principal	1 W 34 W F 1 (MAG)	F41EE F42ILL		43 0.0 59 0.4	SW SW	360	15 1 120 6	W 28 W F 1 1T 32 C F 2 (ELE)	F41SSILL F42ILL	26 59	0.0 0.4	OCC	360 1,500	9 531	6 0	0.0 \$	2.27 59.30		\$ 20		
	Offices 114A Assistant Principal	6 1T 32 C F 2 (ELE) 7 1T 32 C F 2 (ELE) 6 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 0.4 59 0.4	SW SW	2600 1,0	74 7	1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4	000	1,500	620 531	454 0	0.0	69.18 59.30	\$ 128.25	\$ 20	1.9	
	114B Library	7 1T 32 C F 2 (ELE) 8 PAR 38 SP	F42ILL H100/1	11	59 0.4 00 0.8	SW SW	1400 5	120 6 178 7 20 8	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) PAR 38 SP	F42ILL H100/1	59 100	0.4	OCC	980 980	405 784	389 0 173 0 336 0	0.0 \$	26.41 51.17	\$ 128.25	\$ 20	4.9	
	Library Library	16 X 7.0 W 1 9 175 MH WALL	ECF7/1 MH175/1	2	10 0.2 15 1.9	SW SW	1400 2 1400 2,7	124 16 109 9	X 1.5C LED WPLED26	ELED1.5/1 WPLED26	1.5	0.0	OCC	980 980	24 265	200 0 2,444 1	1.1 \$ 1.7 \$	41.25 503.51	\$ 2,180.25 \$ 4,648.05	\$ 20 \$ 1,370		
	Library Library	50 S 28 P F 1 (ELE)	F41ILL F42ILL		31 1.6 59 2.5	SW SW	1400 2,1	70 50 69 42	4 ft LED Tube 1T 32 C F 2 (ELE)	200732x1 F42ILL	15 59	0.8 2.5	OCC OCC	980 980	735 2,428	1,435 0 1,041 0	1.8 \$ 1.0 \$	281.60 158.48	\$ 7,388.25	\$ 270	26.2 0.8	1
	118 Comp Lab 117 empty rm	42 1T 32 C F 2 (ELE) 8 1T 32 C F 2 (ELE) 3 T 32 R F 3 (ELE)	F42ILL F43ILL/2		59 0.5 90 0.3	SW SW	1400 6	61 8	1T 32 C F 2 (ELE) T 32 R F 3 (ELE)	F42ILL F43ILL/2	59 90	0.5 0.3	000	980 1,040	463 281		1.0 \$ 1.0 \$	30.19	\$ 128.25 \$ 128.25	\$ 20 \$ 20	4.2	
	116 Storage Principal Office A-102	2 T 32 R F 3 (ELE)	F43ILL/2 F42ILL		90 0.2 59 0.2	SW SW	1040 1 2600 4	81 3 87 2 60 3	T 32 R F 3 (FLF)	F43ILL/2 F42ILL	90 59	0.2	OCC	1,040	187 266	- 0 195 0	1.0 \$ 1.0 \$	29.65	\$ 128.25	\$ 20	4.3	1
	cont rm. Guidance	3 1T 32 C F 2 (ELE) 6 1T 32 C F 2 (ELE) 6 1T 32 C F 2 (ELE)	F42ILL		59 0.4 59 0.4	SW SW	2600 9 2600 9	120 6	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4	OCC	1,500 1,500	531 531	389 0 389 0 18 0	1.0 \$ 1.0 \$	29.65 59.30 59.30	\$ 128.25	\$ 20 \$ 20	2.2	1
	Guidance Guidance	1 IW 34 W F 1 (MAG)	F42ILL F41EE F42ILL		43 0.0 59 0.1	SW SW	2600 3	45 1 107 2	1T 32 C F 2 (ELE)	F41SSILL F42ILL	26 59	0.0 0.1	OCC	1,040 1,500	177	130 0	1.U \$	4.03 19.77	\$ 317.25 \$ 128.25	\$ 20 \$ 20		
	Guidance Conference	2 1T 32 C F 2 (ELE) 2 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 0.1 59 0.2	SW SW	2600 3	07 2 614 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1 0.2	OCC	1,500 1,500	177 354		0.0	19.77	\$ 128.25	\$ 20	6.5	
	Conference Hallway Conference kitchenet	2 W 34 W F 1 (MAG) 2 W 34 W F 1 (MAG)	F41EE F41EE		43 0.1 43 0.1	SW SW	2600 2	24 2 94 2	W 28 W F 1 W 28 W F 1	F41SSILL F41SSILL	26 26	0.1 0.1	NONE OCC	2,600 1,456	135 76	18 0	1.0 \$	39.53 16.14 5.45		\$ -	23.4 92.8	
_	Conference Copy Rm General Office	4 1T 32 C F 2 (ELE)	F42ILL F42ILL		59 0.2 59 0.7	SW SW	2600 6	14 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2 0.7	OCC	1,500 980	354 694	260 0 297 0 260 0	1.0 \$ 1.0 \$	39.53 45.28	\$ 128.25 \$ 128.25	\$ 20 \$ 20		1
	Councel Office Mens Rm	12 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE) 1 1100	F42ILL I100/1	10	59 0.2 00 0.1	SW SW	3120 3	91 12 114 4 112 1	1T 32 C F 2 (ELE) CF 26	F42ILL CFQ26/1-L	59 27	0.2 0.0	OCC	1,500 3,120	354 84	228 0	1.1 \$	39.53 40.44	\$ 128.25 \$ 168.75	\$ 20 \$ 20	3.2 4.2	
	Womens Rm Entrance Way	1 I 100 2 IT 32 C F 2 (ELE)	I100/1 F42ILL	10	00 0.1 59 0.1	SW SW	3120 3 2600 3	112 1 107 2	CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.0	OCC NONE	3,120 2,600	84	228 0	0.1 \$ 0.0 \$	40.44				
	Entrance Way Waiting Area	3 S 28 P F 1 (ELE) 6 S 28 P F 1 (ELE)	F41ILL F41ILL		31 0.1 31 0.2	SW SW	2600 2 2600 4	142 3 184 6	4 ft LED Tube 4 ft LED Tube	200732x1 200732x1	15 15	0.0	NONE NONE	2,600 2,600	117 234	125 0 250 0	1.0 \$ 1.1 \$	22.79 45.58	\$ 435.60 \$ 871.20			
	Waiting Area Elec Rm Rm 150	8 T 32 R F 3 (ELE)	F43ILL/2		00 0.7	SW	0000 4.0	72 8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	NONE	2,600	1.872	- 0	10		•			_

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			EXISTING CON	DITIONS					1	RETROFIT	CONDITIONS			1				COST & SAVIN	IGS ANALYSIS	I NJ Smart Start	I Simple Payback	
				Watts per							Watts per		Retrofit	1	l	Annual kWh				Lighting	With Out	4
Inique c	Area Description description of the location - Room number/Room	No. of Fixtures Standard Fixture Code No. of fixtures Lighting Fixture Code	Fixture Code Code from Table of Standard	Fixture Value from	kW/Space (Watts/Fixt) * (Fixt	Exist Control Annual Hours Pre-inst. Estimated daily	Annual kWh	Number of Fixtures	Standard Fixture Code Lighting Fixture Code	Fixture Code Code from Table of	Fixture Value from	kW/Space (Watts/Fixt) *	Control Retrofit control	Annual Hours of Estimated	Annual kWh (kW/space) *	Saved (Original Annual	Annual kW Saved (Original Annual	Annual \$ Saved (kWh Saved) *	Retrofit Cost Cost for	Incentive Prescriptive	Incentive Length of time	Simp
.,	name: Floor number (if applicable)	before the retrofit	Fixture Wattages	Table of	No.)	control device hours for the	(Annual Hours)	the retrofit		Standard Fixture	Table of	(Number of	device	annual hours	(Annual	kWh) - (Retrofit	kW) - (Retrofit	(\$/kWh)	renovations to	Lighting	for renovations	renov
				Standard Fixture		usage group				Wattages	Standard Fixture	Fixtures)		for the usage group	Hours)	Annual kWh)	Annual kW)		lighting system	Measures	cost to be recovered	b
	Rm 152	12 T 32 R F 3 (FLF)	F43ILL/2	Wattages	0 1.1	0111			T 32 R F 3 (ELE)	F43ILL/2	Wattages	1.1	000	5 ***	1.058	454		\$ 69.07	\$ 128.25		1.9	4
	Rm 152	12 T 32 R F 3 (ELE) 12 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	9	0 1.1	SW 140 SW 140			T 32 R F 3 (ELE)	F43ILL/2	90	1.1	OCC	980	1,058	454		\$ 69.07	\$ 128.25		1.9	+-
	Rm 154 Rm 156	12 T 32 R F 3 (ELE) 12 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	9	0 1.1 0 1.1	SW 140	00 1,51 00 1,51	2 12	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.1	OCC	980	1,058 1,058	454	0.0	\$ 69.07	\$ 128.25	\$ 20	1.9	1
	Prep Rm	12 T 32 R F 3 (ELE)	F43ILL/2	9	0 1.1	SW 140	40 1,12		T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.1	OCC	1,040	1,058	454	0.0	\$ 69.07 \$ -	\$ 128.25 \$ 128.25		1.9	+
	Rm 153 Rm 155	16 T 32 R F 3 (ELE) 17 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	9	0 1.4	SW 140 SW 140	00 2,01	6 16	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.4 1.5	OCC	980	1,411 1,499	605	0.0	\$ 92.10	\$ 128.25	\$ 20	1.4 1.3	₽
	Prep Rm	6 T 32 R F 3 (ELE)	F43ILL/2	9	0 0.5	SW 144		2 6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	OCC	1,040	1,499	643	0.0	\$ 97.85 \$ -	\$ 128.25	\$ 20	1.3	+
	Storage C2	6 T 32 R F 3 (ELE) 2 1T 32 C F 2 (ELE)	F42ILL	5	9 0.1	SW 104	10 12	3 2	11T 32 C F 2 (ELE)	F42ILL	59	0.1	000	1,040 1,040	123	-	0.0	\$ -	\$ 128.25 \$ 128.25	\$ 20		Ŧ
	Storage C1 Custodian Office	2 1T 32 C F 2 (ELE) 2 I 100	F42ILL I100/1	10	0 0.1	SW 104 SW 260		0 2	1T 32 C F 2 (ELE) CF 26	F42ILL CFQ26/1-L	27	0.1	OCC	1,500	81	439	0.1	\$ 78.36	\$ 128.25 \$ 209.25		2.7	+
	Gym Boys Locker	50 High Bay MH 250 11 W 32 W F 1	MH250/1 F41LL	29	5 14.8	SW 296 SW 260	34 43,71	9 50	FXLED78	FXLED78/1	78 15	3.9	OCC	1,092	4,259	39,460	10.9	\$ 6,864.41	\$ 42,338.03			Ŧ
	Boys Locker - Shower	5 I 100	1100/1	10	0 0.5	SW 109	92 54	6 5	4 ft LED Tube CF 26	200732x1 CFQ26/1-L	27	0.2	NONE OCC	2,600 1,456	429 197	486 349 106	0.4	\$ 88.78 \$ 81.99	\$ 898.43 \$ 330.75	\$ 20	10.1 4.0	+
	Boys Locker - Restroom	2 W 32 W F 1 4 L150	F41LL	3	2 0.1	SW 312	20 20	0 2	4 ft LED Tube	200732x1	15	0.0	OCC	3,120 1,040	94			\$ 18.83 \$ 116.71	\$ 291.60	\$ 30	15.5 1.3	#
	Boys Locker - Storage Boys Locker - Storage	3 1100	I150/1 I100/1	10	0 0.8	SW 104 SW 104	40 62 40 31	2 3	CF 26 CF 26	CFQ26/1-L	27	0.1	OCC	1,040	84	512 228	0.2	\$ 51.95	\$ 155.25 \$ 249.75 \$ 898.43	\$ 20	4.8	+
	Girls Locker	11 W 32 W F 1	F41LL	3	2 0.4	SW 260			4 ft LED Tube	200732x1	15	0.2	NONE	2,600		486	0.2	\$ 88.78			10.1	#
	Girls Locker - Shower Girls Locker - Restroom	5 1100 2 W 32 W F 1	I100/1 F41LL	3	0 0.5 2 0.1	SW 109 SW 312		0 2	CF 26 4 ft LED Tube	CFQ26/1-L 200732x1	27 15	0.1	OCC	1,45b	197 94	349 106	0.4	\$ 81.99 \$ 18.83	\$ 330.75 \$ 291.60	\$ 20	4.0 15.5	+
	Girls Locker - Storage	4 1150	F41LL 1150/1	15	0.6	SW 312 SW 104			CF 26	CFQ26/1-L	27	0.1	OCC	3,120 1,040	112	106 512		\$ 116.71	\$ 291.60 \$ 155.25	\$ 20	1.3	1
	Girls Locker - Storage Faculty Rm	3 I 100 8 1T 32 C F 2 (ELE)	I100/1 F42ILL	10	0 0.3 9 0.5	SW 104 SW 140			1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.1 0.5	000	1,040	84 463	228 198	0.0	\$ 51.95 \$ 30.19	\$ 249.75 \$ 128.25		4.8	+
	Mens Rm	2 175	175/1	7	5 0.2	SW 312	20 46	8 2	CF 26	CFQ26/1-L	27	0.1	000	3,120		300	0.1	\$ 53.18	\$ 139.05	\$ 20	2.6	#
	Womens Rm A-106	2 175 36 1T 32 C F 2 (ELE)	175/1 F42ILL	7 5	9 0.2 9 2.1	SW 312 SW 140		8 2 4 36	CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.1 2.1	000	3,120	168 2,082	300 892	0.1	\$ 53.18 \$ 135.84	\$ 139.05 \$ 128.25	\$ 20	2.6 0.9	+
	A-107	12 1T 32 C F 2 (ELE)	F42ILL	5	9 0.7	SW 140	00 99	1 12	1T 32 C F 2 (ELE)	F42ILL	59	0.7	OCC	980	694	297	0.0	\$ 45.28	\$ 128.25	\$ 20	2.8	#
	A-108 A-109 Art	23 1T 32 C F 2 (ELE) 26 1T 32 C F 2 (ELE)	F42ILL F42ILL	5	9 1.4 9 1.5	SW 140 SW 140	00 1.90	0 23 8 26	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	1.4	000	980	1,330 1,503	570 644		\$ 86.79 \$ 98.11	\$ 128.25 \$ 128.25	\$ 20	1.5	+
	A-109 Art Storage	2 W 32 W F 1	F41LL	3	2 0.1	SW 104	40 6	7 2	4 ft LED Tube 1T 32 C F 2 (ELE)	200732x1	15	0.0	000	1,040	31	35	0.0	\$ 8.07	\$ 291.60	\$ 30	36.2	1
	A-110 A-110 Storage	24 1T 32 C F 2 (ELE) 1 T 32 R F 2 (ELE)	F42ILL F42LL	5	9 1.4 0 0.1	SW 140 SW 104	00 1,98	2 24	1T 32 C F 2 (ELE) T 38 R LED	F42ILL RTLED38	59 38	1.4	000	980 1,040	1,388	595 23	0.0	\$ 90.56 \$ 5.22	\$ 128.25 \$ 364.50	\$ 20	1.4 69.8	+
	A-111	24 TT 32 CF 2 (ELE) 1 T 32 CF 2 (ELE)	F42ILL	5	9 1.4	SW 140		2 24	1T 32 C F 2 (ELE) T 38 R LED	F42ILL	59	1.4	000	980	1,388	595 23		\$ 90.56	\$ 128.25	\$ 20	1.4	丰
	A-111 Storage 113	27 IT 32 C F 2 (ELE)	F42LL F42ILL	6	0.1 9 1.6	SW 104 SW 140	40 6	0 27	T 38 R LED 1T 32 C F 2 (ELE)	RTLED38 F42ILL	38 59	0.0	000	1,040	1,561	23 669		\$ 5.22 \$ 101.88	\$ 364.50	\$ 30	69.8 1.3	+
	112	27 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL	5	9 1.6	SW 140	00 2,23	0 27	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL	59	1.6	000	980	1,561	669		\$ 101.88	\$ 128.25	\$ 20	1.3	ᆂ
	Office Music Rms	4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL F42ILL	5	9 0.2	SW 260 SW 260	00] 61	4 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.2	000	1,500	354 354	260	0.0	\$ 39.53 \$ 39.53	\$ 128.25 \$ 128.25	\$ 20	3.2	+
	Music Rms	4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL	5	9 0.2	SW 260	00 61	4 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL	59	0.2	000	1,500	354	260 260		\$ 39.53	\$ 128.25	\$ 20	3.2	ᆂ
	Music Rms Music Rms		F42ILL F42ILL	5	9 0.2	SW 260 SW 260	00 61		1T 32 C F 2 (ELE)	F42ILL F42ILL	59 50	0.2	000	1,500	354 354	260 260 260	0.0	\$ 39.53 \$ 39.53			3.2 3.2	+
	Music Rms	4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE) 4 1T 32 C F 2 (ELE)	F42ILL	5	9 0.2	SW 260	00 61	4 4	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL	59	0.2	000	1,500	354	260 260	0.0	\$ 39.53	\$ 128.25 \$ 128.25	\$ 20	3.2	\pm
	Music Rms Boys Restroom	4 1T 32 C F 2 (ELE) 2 T 32 R F 2 (ELE)	F42ILL F42LL	5	9 0.2	SW 260 SW 312	00 61	4 4	1T 32 C F 2 (ELE) T 38 R LED	F42ILL RTLED38	59 38	0.2	000	1,500	354	260	0.0	\$ 39.53	\$ 128.25	\$ 20	3.2	+
	Girls Restroom	2 T 32 R F 2 (ELE)	F42LL	6	0.1	SW 312	20 37 20 37	4 2	T 38 R LED	RTLED38	38	0.1	000	3,120 3,120	237	137 137	0.0	\$ 24.37 \$ 24.37	\$ 600.75	\$ 40	24.6 24.6	士
_	Aud Stage Auditorium	26 T 32 R F 2 (ELE) 43 175 MH WALL	F42LL MH175/1	6	0 1.6 5 9.2	SW 36 SW 140	50 56 00 12,94	2 26	T 38 R LED WPLED26	RTLED38 WPLED26	38 30	1.0	000	360	356 1,264	206 11,679	0.6	\$ 76.46 \$ 2,405.67	\$ 6,270.75	\$ 280	82.0 9.0	Ŧ
	Storage	2 I 150	1150/1	15	0.3	SW 104	40 31	2 2	CF 26	CFQ26/1-L	27	0.1	000	1,040		256	0.2	\$ 58.36	\$ 21,722.85 \$ 141.75	\$ 20	2.4	士
	Nursing	1 175 2 T 32 R F 4 (ELE)	175/1 F44ILL	7	5 0.1	SW 140 SW 140	00 10	5 1	CF 26 T 28 R F 4	CFQ26/1-L F44SSILL	27 96	0.0	000	980	26 189	79 125	0.0	\$ 15.74 \$ 21.62	\$ 133.65 \$ 411.75	\$ 20	8.5 19.0	+
	Nursing Nursing	3 1T 32 C F 2 (ELE) 1 T 32 R F 2 (ELE)	F42ILL	5	9 0.2	SW 140	00 24	8 3	1T 32 C F 2 (ELE)	F42ILL	59	0.2	000	980	173	74	0.0	\$ 11.32	\$ 128.25	\$ 20	11.3	ᆂ
	Nursing - Restroom Nursing - Restroom	1 T 32 R F 2 (ELE) 1 T 32 R F 4 (FLF)	F42LL F44ILL	6	0 0.1	SW 36	50 2 50 4	2 1 n 1	T 38 R LED T 28 R F 4	RTLED38 F44SSILL	38 96	0.0	000	360 360	14		0.0	\$ 2.94 \$ 2.14	\$ 364.50	\$ 30	123.9 126.2	+
	Cafeteria	72 1T 32 C F 2 (ELE)	F42ILL	5	9 4.2	SW 140			1T 32 C F 2 (ELE)	F42ILL	59	4.2	000	980	4,163	1,784	0.0	\$ 271.69	\$ 270.00 \$ 128.25		0.5 15.1	土
	Cafeteria	24 CF42/1 6 BED 17 C F 4	CF42/1-I F24ILL	4	8 1.2 1 0.4	SW 140 SW 140	00 1,61 00 51	3 24	6BLMWLED BED 17 C F 4	6BLMWLED F24ILL	13 61	0.3	000	980	306 359	1,307 154	0.8	\$ 265.27 \$ 23.41	\$ 4,016.25 \$ 128.25	\$ 20	15.1 5.5	Ŧ
	Cafeteria Kitchen	11 1.75	175/1	7	5 0.8	SW 140	00 1,15	5 11	CF 26	CFQ26/1-L	27	0.4	000	980	291	864	0.5	\$ 173.19	\$ 187.65	\$ 20	1.1	士
	Kitchen Kitchen	23 1T 32 C F 2 (ELE) 3 T 32 R F 2 (ELE) 10 T 32 R F 2 (ELE)	F42ILL F42LL	5	9 1.4	SW 140 SW 140			1T 32 C F 2 (ELE) T 38 R LED	F42ILL RTLED38	59 38	1.4	000	980	1,330 112	570	0.0	\$ 86.79 \$ 26.57	\$ 128.25 \$ 927.00		1.5	+
	Faculty Dinning	10 T 32 R F 2 (ELE)	F42LL	6	0 0.6	SW 140	00 84	0 10	T 38 R LED	RTLED38	38	0.1	000	980	112 372	140 468	0.2	\$ 26.57 \$ 88.55	\$ 837.00 \$ 2,490.75	\$ 120		士
	Storage - assumed	4 T 32 R F 2 (ELE)	F42LL I100/1	6	0 0.2	SW 104	40 25	0 4	T 38 R LED	RTLED38	38	0.2	OCC	1,040	158	92 759		\$ 20.88 \$ 138.63	\$ 1,073.25	\$ 60	51.4 1.2	#
	Receiving Receiving	1 CF42/1	CF42/1-I	4	8 0.0	SW 260 SW 260	00 1,04	5 1	CF 26 6BLMWLED	CFQ26/1-L 6BLMWLED	13	0.0	NONE NONE	2,600	34	91	0.0	\$ 16.62	\$ 162.00	\$ -	9.7	士
	Receiving 140	2 S 28 P F 1 (ELE) 25 1T 32 C F 2 (ELE)	F41ILL F42ILL	3	1 0.1 9 1.5	SW 260 SW 140		1 2	4 ft LED Tube 1T 32 C F 2 (ELE)	200732x1 F42ILL	15 59	0.0 1.5	NONE	2,600	78 1,446	83 620	0.0	\$ 15.19 \$ 94.34	\$ 290.40	\$ 10	19.1 1.4	+
	141 Wood	14 1T 32 C F 2 (ELE)	F42ILL	5	9 0.8	SW 140	00 1,15	6 14	1T 32 C F 2 (ELE)	F42ILL	59	0.8	000	980	809	347	0.0	\$ 52.83	\$ 128.25	\$ 20	2.4	ᆂ
	141 Wood 141 Wood	6 1T 32 C F 2 (ELE) 12 1T 32 C F 2 (ELE)	F42ILL F42ILL	5	9 0.4	SW 140 SW 140	00 49		1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4	000	980	347 694	149 297	0.0	\$ 22.64 \$ 45.28		\$ 20	5.7 2.8	+
	Time Out	2 T 32 R F 4 (ELE)	F44ILL	11	2 0.2	SW 140	00 31	4 2	T 28 R F 4	F44SSILL	96	0.7	000	980	188	125		\$ 21.62	\$ 411.75	\$ 20	19.0	士
	142 Fitness Center 142 Fitness Center - Storage	30 1T 32 C F 2 (ELE)	F42ILL 175/1	5	9 1.8	SW 140	00 2,47	8 30	1T 32 C F 2 (ELE) CF 26	F42ILL CFO26/1-I	59 27	1.8	000	980	1,735	743	0.0	\$ 113.20 \$ 11.39	\$ 128.25 \$ 133.65	\$ 20	1.1 11.7	+
	142 Fitness Center - Storage	3 175	175/1	7	5 0.2	SW 104		4 3	CF 26	CFQ26/1-L	27	0.1	000	1,040 1,040	84	150	0.1	\$ 34.16	\$ 144.45	\$ 20	4.2	1
	142 Fitness Center - Storage Closet Janitor	2 1T 32 C F 2 (ELE) 1 1T 32 C F 2 (ELE)	F42ILL F42ILL	5	9 0.1	SW 104 SW 105		3 2	1T 32 C F 2 (ELE) 1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1	000	1,040	123 86	(21)	0.0	\$ - \$ (3.27)	\$ 128.25 \$ 128.25	\$ 20		+
	Boys	2 1T 32 C F 2 (ELE) 2 1T 32 C F 2 (ELE)	F42ILL	5	9 0.1		20 36	8 2	1T 32 C F 2 (ELE)	F42ILL	59	0.1	000	3,120	368	(21)	0.0	\$ -	\$ 128.25	\$ 20		土
	Girls Rm C-5		F42ILL E42ILL	5	9 0.1		20 36	8 2	1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.1	000	3,120	368	405	0.0	\$ - \$ 29.65	\$ 128.25	\$ 20	4.3	#
	Rm C-5 Storage	3 1T 32 C F 2 (ELE) 1 175	F42ILL I75/1	7	5 0.1	SW 260		8 1	1T 32 C F 2 (ELE) CF 26	CFQ26/1-L	27	0.0	000	1,040	266 28	195 50	0.0	S 11.39	\$ 128.25 \$ 133.65	\$ 20	11.7	1
	Display Boys Rm	6 I 75 4 W 32 W F 1	175/1	7	5 0.5	SW 260 SW 312	40 7 00 1,17 20 39		CF 26 4 ft LED Tube	CFQ26/1-L	27	0.2	000	1,092	177 187	50 993	0.3	\$ 173.93 \$ 37.67	\$ 160.65 \$ 454.95	\$ 20	0.9 12.1	#
	Girls Rm	4 W 32 W F 1	F41LL F41LL	3	2 0.1	SW 312	20 39	9 4	4 ft LED Tube 4 ft LED Tube 4 ft LED Tube	200732x1 200732x1	15 15 15	0.1	000	3,120 3,120 1,040		212 212 18	0.1	\$ 37.67	\$ 454.95	\$ 40	12.1 12.1 52.1	1
	Storage	1 W 32 W F 1	F41LL 175/1	3	2 0.0 5 0.1	SW 312 SW 104 SW 104 SW 260	40 3 40 ~	3 1	4 ft LED Tube	200732x1	15	0.0	OCC		16			\$ 4.03	\$ 209.93		52.1	#
	Storage Stairway 1	1 175 6 1T 32 C F 2 (ELE)	F42ILL	5	9 0.4			'8 1 '0 6	CF 26 1T 32 C F 2 (ELE)	CFQ26/1-L F42ILL	27 59	0.0	NONE	1,040 2,600	920	-	0.0	\$ 11.39 \$ -	S -	\$ -		+
	Boiler Rm	7 EP I 100	1100/1	10	0.7	SW 300	00 2,10	0 7	CF 26	CFQ26/1-L	27	0.2	OCC	3,000	567			\$ 273.73	\$ 270.00	\$ 20	1.0	Ŧ
	Stairway 2 Stairway 3	6 11 32 C F 2 (ELE) 6 1T 32 C F 2 (ELE)	F42ILL F42ILL	5	9 0.4 9 0.4	SW 260 SW 260		0 6	1T 32 C F 2 (ELE)	F42ILL F42ILL	59 59	0.4	NONE NONE	2,600 2,600	920		0.0	\$ -	\$ -	\$ -		+
	Stairway 4	7 EP 100 6 117 32 CF 2 (ELE) 6 117 32 CF 2 (ELE) 6 117 32 CF 2 (ELE) 6 117 32 CF 2 (ELE)	F42ILL	5	9 0.4	SW 260	00 92	0 6	11 32 C F 2 (ELE) CF 26 11 32 C F 2 (ELE) 11 32 C F 2 (ELE) 11 32 C F 2 (ELE) 11 32 C F 2 (ELE)	F42ILL	59	0.4	NONE NONE	2,600	920		0.0	\$ -	s -	\$ -		#
	Stairway 5 Exterior	6 1T 32 C F 2 (ELE) 8 CF42/1	F42ILL CF42/1-I	5	9 0.4 8 0.4	SW 260 Breaker 291	00 92 12 1,11	8 8	1T 32 C F 2 (ELE) 6BLMWLED	F42ILL 6BLMWLED	59 13	0.4	NONE PHC	5,000	520	598	0.0	\$ - \$ 113.17	\$ - \$ 1,296.00	\$ -	11.5	+
	Exterior	4 175 MH WALL	MH175/1	21	5 0.9 5 1.4	Breaker 291	12 2,50	4 4	WPLED26	WPLED26	30 27	0.1			600 2,565	1,904 1,585	0.7	\$ 348.33 \$ 313.21		\$ 600	5.8	I
	Exterior	19 1/5	175/1	7	1.4	Breaker 291	12 4,15	U 19	CF 26	CFQ26/1-L	27	0.5	PHC 0	5,000 5,000 #N/A	2,565	1,585	0.9	\$ 313.21	\$ 102.60	\$ -	0.3	+
		2,490			167.7		300,118	2,490	<u> </u>			126.5			163,086		41.1	24,111	197,006	\$23,620	<u> </u>	1
_																nd Savings						

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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



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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. I 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 yo 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 rec 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 constructive or replacing/adding equipment.

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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 applicable 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, 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 so 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 quequipment (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 fi permits.

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Equipment Incentives

Special Notice

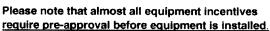
Enhanced incentives are available for NJ SmartStart Building upgrades in buildings imp Hurricane Sandy. Eligible projects receive an additional 50% and new incentives have added for high efficiency food service equipment.

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.



(click for exceptions) To start the pre-approval process,

submit an Equipment Application, and appropriate Equipment Worksheets, for the type of 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 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.

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**

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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 Measure
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 Hurric Sandy. Approved applications will have the standard timeframyear 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 pt 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, Appro applications will have the standard timeframe of one year from the proc 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 fixture 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

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 prograi incentive threshold, currently 5% more energy efficient than ASHRA 2007 for New Construction only.)

Custom electric and gas equipment incentives (not prescriptive)

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

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II. DIRECT INSTALL



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SBC CREDIT PROGRAM



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

Sometimes, the biggest challenge to improving energy efficiency is knowing where to and how to get through the process. Created specifically for existing small to medium facilities, Direct Install is a turnkey solution that makes it easy and affordable to upgrahigh efficiency equipment. Direct Install is designed to cut your facility's energy costs replacing lighting, HVAC and other outdated operational equipment with energy efficient 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 fawith 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 deithreshold and have occupied the building during that till Buildings must be located in New Jersey and served by the state's public, regulated electric or natural gas utility 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, types capacities. Boilers may not exceed 500,000 Btuh and furnaces may not exceed 140,

III. PAY FOR PERFORMANCE (P4P)



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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 facilities earn incentives that are directly linked to your savings. Pay for Performance relies on a

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ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

ENERGY BENCHMARKING



program partners who provide technical services under direct you. Acting as your energy expert, your partner will develop ε 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, schoshopping malls and restaurants. Buildings that fall into the fol customer classes are not required to meet the 100 kW demai

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, manufwater treatment and datacenter building types whose annual energy consumption is her weighted on process loads. Details are available in the high energy intensity section of t

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 in facilities and comparing it to similar buildings. That can be a big help in locating opportui cost-justified energy efficiency upgrades. And, based on our findings, you may be invited participate in the Building Performance with ENERGY STAR initiative and receive specirecognition as an industry leader in energy efficiency.

Incentives

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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 the 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
About Us | Press Room | Library | FAQs | Calendar | Newsletters | Contact Us | Site





PAY FOR PERFORMANCE APPLICATION FORM

July 1, 2014 - June 30, 2015

Utility Serving Applicant:	☐ Atlantic City Electric	☐ Jersey (Central Power &	Z Light	□ PSE&G					
☐ New Jersey Natural Gas	□ Elizabethtown Gas	□ Rocklan	d Electric Co.		☐ South Jersey Gas					
☐ Other Electric Service Prov	rider (please specify):									
Other Fuel Provider:	경영 : 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_ 🗆 Other (Plea	ise specify):						
Instructions										
1. Read the program material to determine proj. 2. Read the Participation Agreement and sign v. 3. Fill out all applicable spaces on this form. 4. Provide a copy of the customer's company v. 5. Provide the most recent consecutive 12 mont project for all accounts, organized in chronol account. Utilize Utility Tool for applications.	where indicated. V-9 form. th period of utility bills for the logical order and separated by	 6. Provide brief description of facility, noting any special or unusual circumstances and/or site conditions. 7. Partner must submit the application package via e-mail, mail or fax DIRECTL 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 Planapplication and program guidelines for more information. 								
Customer/Owner In	formation (paymer	nt will be m	ade to entity	entered l	nere)					
Company Name			Project Contact/Title							
Company Address		City		State	Zip					
Phone/Fax	E-mail		Federal ID/S	SSN	annum allamina aquimu danum annuque usano nene igo responsa senante e responsa e con					
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	de de la		as							
* Note: Please use the back of this page for additional u Annual Peak kW Demand	Building Type	111.		Number of	f Buildings					
Size of Building(s) (gross sq/ft)		Direct, Ma	ster or Sub Metered							
Funding		a Terror								
☐ Check the box if an Energy Saving agencies to pay for energy related in Do you expect to receive funding	improvements using the value of	f the resulting en	ergy savings.							
Utility Program #1 – Utility:		_	ram Name:							
Utility Program #2 – Utility:										
Federal Program #1 - Organization	on:	Prog	ram Name:							
Federal Program #2 - Organization	on:	Prog	ram Name:							
Other Program – Organization: _		Prog	ram Name:							

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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

Pay For Performance-Existing Buildings

Participation Agreement

Definitions:

ADMINISTRATOR - New Jersey Board of Public Utilities (NJBPU)

APPLICATION PROCESS - The Program pays incentives in phases upon satisfactory completion of each of three Program milestones - approval of a complete Energy Reduction Plan, installation of all recommended measures per the Energy Reduction Plan, completion of Post-Construction Benchmarking Report (for incentive amounts, please refer to Incentive Amounts). In order to be eligible for Program Incentives, a Participating Customer or an agent authorized by a Customer, must submit to the Market Manager a properly completed application package application form, Participating Customer's company W-9, twelve consecutive months of the project's utility bills and executed Participation Agreement. All components of the application package must be filled out completely, truthfully and accurately. This application package must be received on or before June 30, 2015 in order to be eligible for the Fiscal Year 2015 Incentives. The Market Manager will review the application package to determine if the project is eligible for a Program Incentive. When approved, the Participating Customer will receive an approval letter from their Case Manager with the estimated authorized first incentive amount and the date by which the Energy Reduction Plan must be submitted. Upon receipt of the approval letter, the Participating Customer and Partner may proceed with work on the Energy Reduction Plan. The Market Manager or agent thereof 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 Energy Reduction Plan approval letter. 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

CHANGES TO THE PROGRAM – The Program and Participation Agreements may be changed by the Market Manager at any time without notice. Approved applications, however, will be processed to completion under the agreements in effect at the time of the Market Manager's approval.

ELIGIBILITY - Program Incentives are available to existing commercial, industrial and certain multifamily buildings with peak kilowatt demand usage of more than 100 kW in any of the most recent preceding twelve months of utility bills and a customer of the New Jersey Utilities. Market Manager has the discretion to approve applications that fall below the 100 kW minimum by no more than 10%. If the Participant is a municipal electric company customer, and a customer of an investor-owned gas New Jersey Utility, only gas measures will be eligible for incentives under the Program. Similarly, if the Participant is an oil/propane customer and a customer of an investor-owned electric New Jersey Utility, only electricity measures will be eligible for incentives under the Program.

Equipment procured by participating Customer through another program offered by the New Jersey Utilities, as applicable, is not eligible for incentives through this Program. Customers who, from July 1, 2013 — June 30, 2014, have not contributed to the Societal benefits Change of the applicable New Jersey Utility may not be eligible for incentives offered through this program.

ENDORSEMENT – The Market Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

ENERGY-EFFICIENT MEASURES – Any device eligible to receive a Program Incentive payment through the New Jersey's Clean Energy Commercial and Industrial Program. The total package of measures as presented in the Energy Reduction Plan must have at least a 10% internal rate of return (IRR).

ENERGY REDUCTION PLAN – A document created by the Participating Customer's selected Partner that defines several key aspects of the project including (but not limited to) existing conditions as a result of a whole-building technical analysis, benchmarking summaries, recommended measures, financing plan and implementation schedule.

ENERGY REDUCTION PLAN APPROVAL - After application approval, the Participating Customer and Partner must work together to finalize and submit an Energy Reduction Plan which incorporates a work scope that will achieve the minimum 15% reduction in source energy performance target in accordance with the Program rules and policies along with the Benchmarking Tool, modeling software file, a copy of the executed Partner and Participating Customer contract, an original copy of the executed Installation Agreement and a Request for Incentive #1 Payment form. All components of the submittal package must be filled out completely, truthfully and accurately. The Market Manager, agents thereof and/or the selected Partner must be provided reasonable access to the Participating Customer's facility, staff, tenants and/or others necessary to develop an Energy Reduction Plan that will achieve the minimum 15% performance target as well as the necessary utility billing data as dictated by the Program. The Energy Reduction Plan submittal package will be reviewed and must be approved by the Market Manager prior to payment of Incentive #1. Upon approval of the submittal package, the Customer will receive an Incentive #1 approval letter indicating the date by which all measures in the Energy Reduction Plan must be installed (no later than twelve months following the Energy Reduction Plan submittal approval date).

INCENTIVE AMOUNTS - Incentive #1 - \$0.10 per square foot of the project with a maximum amount of \$50,000 and minimum of \$5,000, not to exceed 50% of the project's annual energy cost and contingent on installation of measures in the Energy Reduction Plan and receipt of a signed Installation Agreement. If installation does not commence within the required timeframe, Incentive #1 may be required to be returned to the program. In the event the project is cancelled and Incentive #1 is not returned, the project may reapply to the program in the future but another Incentive #1 will not be paid. Incentive #2 - 50% of the total performance-based incentive (combination of Incentives #2 and #3) calculated per Program's incentive structure; Incentive #3 remaining amount based on the realized energy savings of the project. For customers that have successfully participated in the Local Government Energy Audit Program, Incentive #1 will be reduced by 50% to \$0.05 per square foot up to \$25,000. Actual Incentive #1 paid shall not be higher than 5% over the committed amount. Actual Incentive #2 paid shall not be higher than the committed amount, unless the Energy Reduction Plan has been resubmitted due to changes in the work scope. Actual Incentive #3 paid shall be higher or lower than the committed amount based on actual energy savings but shall not be greater than program Incentive Caps

The Market Manager will provide incentives according to those described in this section or as modified upon notice to Participating Customer. All incentive payments are paid directly to the Participating Customer or the Participating Customer's designed as indicated on the application form. The Program is not bound to pay any incentive unless the submittal package associated with the incentive payment is approved by the Market Manager who reserves the sole discretion of approving or disapproving the submittal packages.

INCENTIVE CAP – Program Incentives #2 and #3 will be capped not to exceed 50% of the total actual project cost. Incentive #1 will be capped not to exceed 50% of the project's annual energy cost. The Market Manager reserves the right to limit the amount of the Program Incentives (Incentive #1, #2 and #3) to \$1M per gas and electric account (limited to \$2M per project) in a program year. Campus style facilities, which are mastered-metered, are subject to the annual incentive cap of \$1 million per gas and electric account. The Participating Customer will also be subject to an annual Entity Cap of \$4M (Definition of an Entity can be found in the Board Order Docket No. EO07030203).

INSTALLATION AGREEMENT – The Participating Customer must submit an executed Installation Agreement as part of the Request for Incentive #1 Form. By executing the Installation Agreement, the Customer agrees to install all of the measures in the Energy Reduction Plan, which are estimated to result in meeting or exceeding the minimum 15% performance target. The Customer agrees to the performance-based incentives (Incentives #2 & #3) as indicated in the document which are based on the results of the Energy Reduction Plan. Implementation of the measures must commence in the time period twelve months following the approval date of the Energy Reduction Plan. Failure to complete the installation of the measures in the Energy Reduction Plan may result in the repayment of Incentive #1. In the event the project is cancelled and Incentive #1 is not returned, the project may reapply to the program in the future but another Incentive #1 will not be paid.

LIMITATION OF LIABILITY – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against TRC Energy Services, the Market Manager, and the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Market Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Market 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 Market Manager under this Program shall be individual, and not joint and/or several.

The Market Manager's review and approval of the Energy Reduction Plan cannot be construed to be a determination as to performance, applicability, dollar savings, energy savings, or any other aspect of the proposed project. The Market Manager and Administrator offer no guarantee or warranty of performance of the project's equipment or system. The participant assumes full responsibility and liability for the installation of all equipment, including but not limited to design, specification, all permits, installation, maintenance, performance and financing. By participating in the program and accepting incentive dollars, you agree to hold harmless the Market Manager and Administrator and their respective staffs with respect to the Project

MARKET MANAGER – TRC Energy Services is responsible for managing the New Jersey Clean Energy Commercial & Industrial Programs.

MEASUREMENT & VERIFICATION APPROVAL – Twelve months subsequent to the Incentive #2 Payment Submittal package submission date, measurement and verification of the projected energy reduction will be conducted by the Participating Customer's Partner using the project's post-installation utility data (supplied by the Customer). The Participating Customer must work with their Partner to submit the Incentive #3 Payment Submittal, consisting of the Post-Construction Benchmarking Pay For Performance-Existing Buildings Report, Benchmarking Tool, and Request for Incentive #3 form. All components of the submittal package must be filled out

completely, truthfully and accurately. Upon review of the submittal package (by the Market Manager or agent thereof), the remaining 50% of the total performance-based incentive (Incentives #2 & #3) will be released to the Participating Customer. If the Post-Construction Benchmarking Report indicates that the project did not meet the minimum performance target, the post-installation completion period may be extended to up to twenty-four months subsequent to the Incentive Payment #2 package submission date. Upon approval of the submittal package, the Customer will receive an Incentive #3 Submittal approval letter indicating successful completion of the program.

NEW JERSEY UTILITIES - The investor-owned 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.

PARTICIPATING CUSTOMERS - Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

PARTICIPATING CUSTOMER'S CERTIFICATION – Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements per the Program Guidelines. Participating Customer certifies that he/she purchased and installed the equipment listed in the Energy Reduction Plan at their defined New Jersey project location.

PARTNER—An approved professional who provides technical building performance services to Participating Customers, acting as their "energy efficiency expert". Participating Customers are required to hire an approved Pay for Performance Partner to develop the Energy Reduction Plan and facilitate installation of the recommended package of Energy-Efficient Measures. Participants are required to enter into a contractual agreement with a selected Partner which outlines the set of minimum services the Partner will provide to the Participating Customer throughout the life of the project. It is strongly recommended that Participating Customers perform due diligence in selecting a Pay for Performance Partner. Fees charged by the Partner are not regulated by the Program and could vary between Partners.

PERFORMANCE-BASED INCENTIVES – The combination of Incentives #2 and #3, which are based on the projected and actual energy reduction performance of the project.

PERFORMANCE TARGET – A minimum of a 15% annual source energy savings performance target must be achieved in order to participate. The performance target is based on reducing the total energy consumption for the facility. No more than 50% of the total source energy savings may be derived from lighting measures. The total energy savings may not come from a single measure. A 4% performance target may be offered to customers whose annual energy consumption is heavily weighted to manufacturing and process loads. This approach will be reviewed on a case-by-case basis and must be pre-approved by the Market Manager. In order to be considered, the project must involve: A manufacturing facility, including such industries as plastics and packaging, chemicals, petrochemicals, including such industries as plastics and packaging, chemicals, petrochemicals, unctals, paper and pulp, transportation, biotechnology, pharmaceutical, food and beverage, mining and mineral processing, general manufacturing, equipment manufacturers and data centers; and manufacturing and/or process-related loads, including data center consumption, consume 50% or more of total facility energy consumption. No more than 50% of the total source energy savings may be derived from non-investor owned utilities or fuels.

POST-INSTALLATION APPROVAL – After the complete installation of all measures in the Energy Reduction Plan, the Customer and their Partner must finalize and submit the Incentive #2 Payment Submittal, consisting of the Installation Report, invoices, and Request for Incentive #2 Payment form. All components of the submittal package must be filled out completely, truthfully and accurately. Upon review of the submittal package and verification of the complete installation of all measures in the Energy Reduction Plan (via inspection by the Market Manager or agent thereof), 50% of the total performancebased incentive (Incentives #2 & #3) will be released to the Participating Customer. Upon approval of the submittal package, the Customer will receive an Incentive #2 approval letter indicating the date by which the post-installation Measurement & Verification phase began and will end (twelve months in length).

The Market Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing products 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 the service territory of one of the New Jersey Utilities (as defined by the Program) as designated on the Participating Customer's Pay for Performance application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program Guidelines. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease.

PRE-INSTALLED MEASURES - An Energy Reduction Plan must be approved by the program and an approval letter sent to the customer in order for incentives to be committed. Upon receipt of an Energy Reduction Plan, all project facilities must be preinspected. Measures installed prior to pre-inspection of the facility shall not be included as part of the ERP scope of work and will not be eligible for incentives. Measure installation undertaken prior to ERP approval, but after pre-inspection, is done at the customer's own risk. In the event that an Energy Reduction Plan is rejected by the program, the customer will not receive any incentives.

PRODUCT INSTALLATION OR EQUIPMENT INSTALLATION – Installation of the Energy-Efficient Measures.

Projects with a contract threshold of \$15,444 are required to pay no less than prevailing wage rare 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 – New Jersey's Clean Energy Pay for Performance Program offered herein by the New Jersey Board of Public Utilities pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

PROGRAM GUIDELINES - See Pay for Performance Program Guidelines available from your Partner.

PROGRAM INCENTIVES – Refers to the amount or level of incentive that the Program provides to participating customers pursuant to the Program offered herein (see the description under "Incentive Amount" heading).

PROGRAM OFFER – The Program covers products purchased and/or services rendered on or after July 1, 2014. Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities.

PROJECT – A commercial, industrial or multifamily existing building with peak demand in excess of 100 kW in any of the most recent preceding twelve months of electric usage. Multifamily building(s) must be four (4) stories or greater or three (3) stories and under having central heating, cooling, or metering serving more than one building. The 100 kW requirement is waived for the following customer classes: hospitals, non-profits (as defined by section 501(c)(3) of the luternal Revenue Code), public colleges and universities, local government entities, including K-12 schools, and affordable multifamily customers (defined as low income, subsidized, HUD, etc.)

TAX CLEARANCE CERTIFICATION – Businesses must apply for and receive a Tax Clearance Certificate from the New Jersey Division of Taxation before they can receive any incentive, grant or other financial assistance from the Program.

TAX LIABILITY – The Market 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 on the application form in addition to providing a copy of their W-9 form as part of the application package in order to receive a Program Incentive.

TERMINATION – New Jersey's Clean Energy Program reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

WARRANTIES – THE MARKET MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITY. 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 PROVIDES FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

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 Market Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the Pay For Performance Program, including the release of electric and natural gas utility billing information, as well as make available to the public non-sensitive information. 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. This arrangement supersedes all other communications and representations.

CUSTOMER'S	SIGNATURE
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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)



Your Power to Save

At Home, for Business, and for the Future

About Us | Press Room | Library

HOME

RESIDENTIAL

COMMERCIAL, INDUSTRIAL AND L€CAL GOVERNMENT





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

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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 approbest 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)

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

Bloomfield Middle School CHA Project Numer: 30040

Cost of Electricity /kWh Electricity Usage 636,960 kWh/yr System Unit Cost \$4,000 /kW

Photovoltaic (PV) Solar Power Generation - Screening Assessment

Budgetary	Annual Utility Savings			Estimated	Total	Federal Tax	New Jersey Renewable	Payback (without	Payback (with	
Cost				Maintenance	Savings	Credit	** SREC	incentive)	incentive)	
					Savings					
\$	kW	kWh	therms	\$	\$	\$	\$	\$	Years	Years
\$960,000	240.0	305,972	0	\$56,605	0	\$56,605	\$0	\$61,194	17.0	8.1

^{**} Estimated Solar Renewable Energy Certificate Program (SREC) SREC for 15 Years= \$200 /1000kwh

Area Output*

35,700 ft2

Perimeter Output*

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

30,319 ft2

Approximate System Size:

Is the roof flat? (Yes/No) Yes

watt/ft2 242,553 DC watts

Enter into PV Watts kW 240

PV Watts Inputs***

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

PV Watts Output

305,972 annual kWh calculated in PV Watts program

% Offset Calc

Usage PV Generation 636,960 (from utilities)

305,972 (generated using PV Watts)

% offset 48%

http://www.freemaptools.com/area-calculator.htm

http://www.flettexchange.com

http://pvwatts.nrel.gov/



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≅NREL

Caution: Photovoltals system performance predictions calculated by PVWatts's include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts's inputs. For example, PV modules with better performance are not differentiated within PVWatts's from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at http://sam.nrelgov) that allow for more precise and complex modeling of PV systems.

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RESULTS

305,972 kWh per Year *

Month	Solar Radiation (kWh / m² / day)	AC Energy (kWh)	Energy Value (\$)
January	2.78	18,070	1,334
February	3.52	20,445	1,509
March	4.34	27,184	2,006
April	4.95	28,957	2,137
May	5.69	33,418	2,466
June	5.86	32,457	2,395
July	5.73	32,399	2,391
August	5.47	30,663	2,263
September	4.91	27,390	2,021
October	3.99	23,792	1,756
November	2.68	16,164	1,193
December	2.35	15,032	1,109
Annual	4.36	305,971	\$ 22,580

Location and Station Identification

Requested Location	60 Huck Road Bloomfield NJ 07003
Weather Data Source	(TMY2) NEWARK, NJ 7.4 mi
Latitude	40.7° N
Longitude	74.17° W

PV System Specifications (Commercial)

DC System Size

DC System Size	240 KVV
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	180°
System Losses	14%
Inverter Efficiency	96%
DC to AC Size Ratio	1.1

240 144

Initial Economic Comparison

	erage Cost of Electricity Purchased m Utility	0.07 \$/kWh
Init	tial Cost	2.60 \$/Wdc
Co	st of Electricity Generated by System	0.13 \$/kWh

Selected Incentives

Capacity Based Incentives (CBI)	New Jersey Renewable Energy Incentive Program Rate: \$0.75 - Maximum Amount: \$5,625.00

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.





BLOOMFIELD MIDDLE SCHOOL



UNIT VENTILATORS IN CAFETERIA



INTERIOR OF UNIT VENTILATOR



FITNESS CENTER



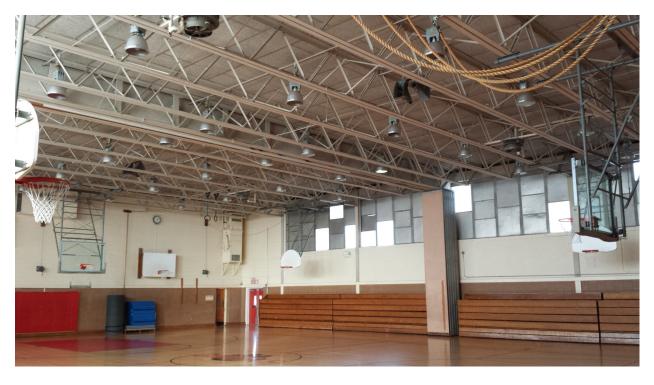
ROOFTOP UNITS SERVING CLASSROOMS 112 AND 113



AIR COOLED CONDENSING UNIT SERVING OFFICE AREAS



ROOFTOP UNITS SERVING MEDIA CENTER WING



GYMNASIUM LIGHTING



KITCHEN EXHAUST HOOD



AIR COOLED CONDENSING UNITS SERVING HALLWAYS OF NEW WING





ENERGY STAR[®] Statement of Energy **Performance**

Bloomfield Middle School

Primary Property Function: K-12 School

Gross Floor Area (ft2): 153,380

Built: 1960

ENERGY STAR®

For Year Ending: June 30, 2014 Date Generated: May 21, 2015

Score ¹					
The ENERGY STAR score is a 1-100 asses climate and business activity.	ssment of a building's energ	y efficiency as compared with similar buildings nation	nwide, adjusting for		
Property & Contact Information					
Property Address Bloomfield Middle School	Property Owner	Primary Contact	Primary Contact		
60 Huck Road Bloomfield, New Jersey 07003	· ()		, ()		
Property ID : 4431550					
Energy Consumption and Energy	Use Intensity (EUI)				
	Fuel i) 2,173,308 (22%) 7,561,300 (78%)	National Median Comparison National Median Site EUI (kBtu/ft²) National Median Source EUI (kBtu/ft²) % Diff from National Median Source EUI Annual Emissions	67.8 102.8 -6%		
96.3 kBtu/ft²		Greenhouse Gas Emissions (Metric Tons CO2e/year)	692		
Signature & Stamp of Verify	ing Professional	· ·			
I (Name) verify	that the above information	on is true and correct to the best of my knowledg	e.		
Signature:	Date:		\neg		
Licensed Professional					
·, ()					
		Professional Engineer Stamp			

(if applicable)