COUNTY OF ESSEX

YOUTH HOUSE

70 Duryea Street, Newark, NJ, 07102

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

January 2015

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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 Essex County (EC) 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
Youth House	70 Duryea Street, Newark, NJ, 07102	105,000	1997

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)
Youth House	388,951	5,911	63,744	7.4

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	Add a Condensing Gas Boiler	67,463	2,040	33.1	3,500	31.4	Y
ECM-2	Install VFDs on the Chilled Water Pump Motors	23,839	3,075	7.8	2,400	7.0	Y
ECM-3	Central DDC System Retro-commissioning and VAV System Recalibrating	45,791	14,830	3.1	0	3.1	Y
ECM-4	Replace the DHW Boiler with Condensing DHW Water Heater	47,820	1,095	43.7	2,625	41.3	Y
ECM-5	Replace Pool Water Heater with Condensing Water Heater	4,121	109	37.7	70	37.0	N
ECM-6	Install Walk-in Cooler/Freezer Control	20,625	1,419	14.5	0	14.5	Y
ECM-7	Replace Dishwasher Electric Booster Heater with Gas Booster Heater	15,100	601	25.1	30	25.1	N
ECM-8	Replace Plumbing Fixtures with Low Flow Fixtures	660,016	3,763	175.4	0	175.4	N
ECM-L1**	Lighting Replacements / Upgrades	252,830	40,555	6.2	51,770	5.0	N
ECM-L2**	Install Lighting Controls (Add Occupancy Sensors)	16,200	1,715	9.4	2,100	8.2	N
ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	269,030	41,285	6.5	53,870	5.2	Y
	Total**	1,153,805	68,217	16.9	62,495	16.0	
	Total(Recommended)	474,568	63,744	7.4	62,395	6.5	

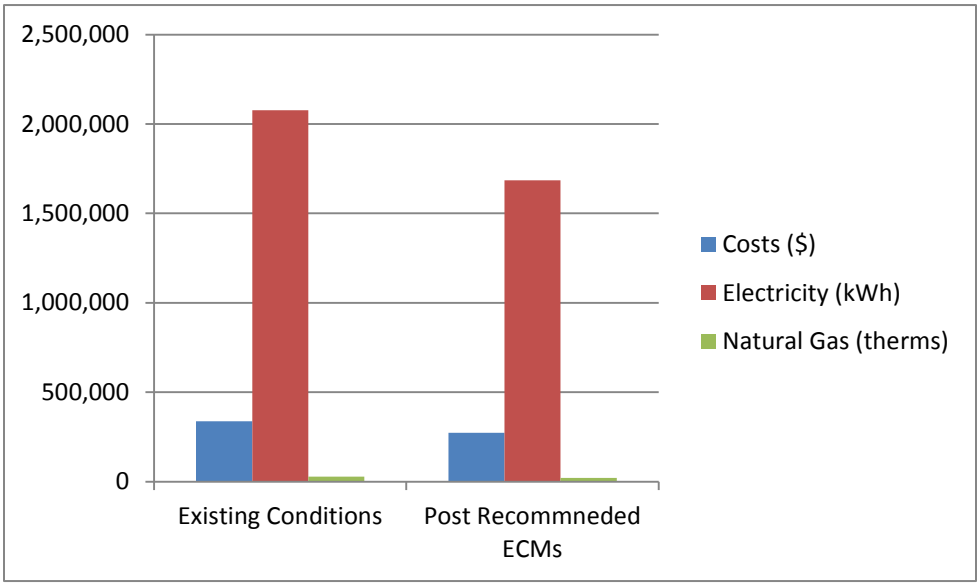
* Incentive shown is per the New Jersey SmartStart Program.
** These ECMs are not included in the Total, as they are alternate measures not recommended.

The following alternative energy measures are also recommended for further study:

- Photovoltaic (PV) Rooftop Solar Power Generation – 60 kW System

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

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs ($)	336,963	273,218	19%
Electricity (kWh)	2,077,140	1,688,189	19%
Natural Gas (therms)	27,376	21,465	22%
Site EUI (kbtu/SF/Yr)	93.6	75.3	



2.0 BUILDING INFORMATION AND EXISTING CONDITIONS

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

Building Name: Youth House
Address: 70 Duryea Street, Newark, NJ, 07102
Gross Floor Area: 105,000
Number of Floors: 4 floors and one basement
Year Built: 1997

Building Envelope

Description of Spaces: This is a juvenile detention center which has detention cells, offices, visiting rooms, cafeteria, kitchen, gymnasium, storage rooms, toilet rooms mechanical rooms and an outdoor pool.
Description of Occupancy: The facility holds an average of 125 people including prisoners and staff and the maximum occupancy is about 214.
Number of Computers: The amount of computers is not available to the county security requirements.
Building Usage: Based on the nature of the building, it is occupied 8,760 hours per year.
Construction Materials: Structural steel and concrete block.
Roof: The building has a flat roof which is covered with light grey rubber membrane. It is believed that the roof is well insulated. The roof is in good condition and no ECMs associated with roof replacement.
Windows: The windows throughout the building are double pane aluminum framed windows. Windows are in good condition and no ECMs associated with window replacement are evaluated.

Exterior Doors: Exterior doors are steel doors and in good condition. No ECMs associated with the door seals replacement are evaluated.

Heating Ventilation & Air Conditioning (HVAC) Systems

Heating: Two Weil-McLain heating hot water boilers are used to provide heating hot water for the heating coils in the building. The boilers have a rated 2,396 MBH input and 1,904 MBH output which results in a nameplate efficiency of 79.5%. The heating hot water is circulated to the building by two (2) 7.5HP hot water supply pumps. There are five McQuay RTUs equipped with HHW coils to provide heating for the four wings and gymnasium during winter season. The details of these RTUs are shown below:

Name	Manufacturer	Capacity	Location	Serving Area
RTU-1	McQuay	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	Roof	Wing-1
RTU-2	McQuay	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	Roof	Wing-2
RTU-3	McQuay	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	Roof	Wing-3
RTU-4	McQuay	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	Roof	Wing-4
RTU-5	McQuay	RTU unit equipped with HHW coil and CHW coil, the supply fan and 5HP return fan are driven by VFDs	Roof	Gym

Apart from the central heating hot water system, there are four (4) Carrier heat pumps located on the lower roof to provide additional heat for the offices. The details of these heat pumps are shown in the cooling section. An ECM related to replace the boilers with condensing boilers is evaluated.

Cooling: The majority of this building is cooled by two Carrier air cooled chillers located on the roof. Each of these two chillers has a rated cooling capacity of 190 ton and EER of 10.5. The chilled water is circulated by two water pumps driven by 20 HP motors which have a nameplate efficiency of 90%. Each RTU mentioned in the heating section has a cooling coil and VAV boxes to provide cooling for the served areas. Apart from the central chilled water system, there are four roof top units air cooled heat pump units located on the lower side roof. The details of these heat pumps are shown below:

Name	Manufacturer	Capacity	EER	Location	Serving Area
HP-1	Carrier	58.7MBH cooling capacity and 30.7 MBH heating capacity	9.25	Lower Roof	Offices
HP-2	Carrier	58.7MBH cooling capacity and 30.7 MBH heating capacity	9.25	Lower Roof	Offices
HP-3	Carrier	33.6MBH cooling capacity and 15 MBH heating capacity	9.4	Lower Roof	Offices

HP-4	Carrier	37MBH cooling capacity and 10.2 MBH heating capacity	10	Lower Roof	Offices

An ECM related to install VFDs on the chilled water pump motors is evaluated.

Ventilation: The ventilation of the building is provided by the five McQuay RTUs located on the roof and four Carrier heat pump RTUs located on the lower roof. Each of the RTUs has an outdoor air intake to bring fresh air to the building. All the RTUs can provide 100% outdoor air for economizer mode during the shoulder season to reduce the HVAC load. The McQuay RTUs have VAV systems and all of the fan motors are driven by variable frequency drives. Therefore, the amount of fresh air is adjusted based on the HVAC load. The ventilation system is in good condition and therefore, there is no ECM associated with the ventilation system.

Exhaust: This building is generally exhausted by the McQuay RTU return fans and has multiple fractional horsepower exhaust fans serving restrooms located on the roof. The fans are enclosed and therefore the capacities of fan motors are unknown. The kitchen exhaust fan has heat recovery unit to provide the make-up air for the kitchen. The kitchen exhaust heat recovery system appears to be in good condition and the exhaust fans for general purpose are small and do not consume a lot of energy, therefore no ECMs were evaluated for the exhaust fans.

Controls Systems

The building has a Barber Coleman central direct digital control (DDC) system controlling most of the HVAC devices in the building. Each VAV box has its own thermostat to control the room temperature. The facility is operational 24/7, therefore, there is no temperature setback program in the control system. Reviewing of the control screens, it was noted that the space temperature is typically set at 72 ^{o}F during cooling season and 70 ^{o}F during the heating season, although space thermostats were observed to be higher on the day of our site visit. The heating hot water boilers are turned on when the outdoor air temperature is below 65^{o}F. It was noted that most of the supply fan VFDs of the RTUs were running at 100%. In discussions with the facility staff, it is noted that some of VAV boxes are not functioning correctly and therefore the VAV system is not running at the most energy efficient way. Therefore, an ECM associated with retro-commissioning the DDC system and VAV system has been included.

Domestic Hot Water Systems

Domestic hot water (DHW) is provided by a gas fired Weil-McLain DHW boiler which has a rated 1,904 MBH heating capacity and 79.5% efficiency. The hot water is stored in two 1,000 gallon storage tanks. This DHW boiler can be upgraded to condensing DHW boiler, therefore, an ECM associated with replacing the DHW heater is evaluated.

The facility also has an outdoor pool which is equipped with pool heater which has a rated energy input of 400 MBH. The pool water is circulated by a 2.5HP pump motor. An ECM related to replacing the pool heater with a condensing pool water heater is evaluated.

Kitchen Equipment

There is a kitchen and a cafeteria in this building. There are two Garland stoves, two Traulsen ovens, and one Cleveland oven. The deep fryers and Cleveland ovens are not used since the cafeteria does not provide fried food. The kitchen also has two walk-in coolers and one walk-in freezer. The condensers for the walk-in coolers and freezers are on the roof. The kitchen hood

has a designated make-up air unit to compensate the air exhausted by the kitchen hood. There is also a dishwasher located in the kitchen. The dishwasher is equipped with an 8 kW electric booster heater. ECMs related to upgrading the control on the walk-in cooler/freezer and converting the electric booster heater to gas are evaluated.

Plug Load

This building has computers, LCD monitors, copiers, CCTV monitor system and printers which contribute to the plug load in the building. Due to the security issues, most devices are on 24/7 and cannot be powered down. Therefore, no ECM associated with plug load devices are evaluated.

Plumbing Systems

The restrooms contain toilets, urinals and sink faucets installed in 1997. There are low-flow plumbing fixtures available to replace them and reduce water usage. Therefore, an ECM related to plumbing system replacement is evaluated.

Lighting Systems

The building has a combination of 32W T-8 fluorescent lighting; 40W U–shape fluorescent lighting and CFL spot lights. The majority of lighting fixtures are T-8 fluorescent U-shape and linear fixtures. All the lights are controlled by manual switches. There are some rooms in this building that are high security rooms and not accessible during the site visit, therefore, the light in some rooms is based on the lighting plans provided by Essex County. We have provided three alternatives for lighting that include adding occupancy sensors to the existing lights, replacing the lights with LED lights and a third ECM that evaluates adding occupancy sensors to the proposed LED lights.

3.0 UTILITIES

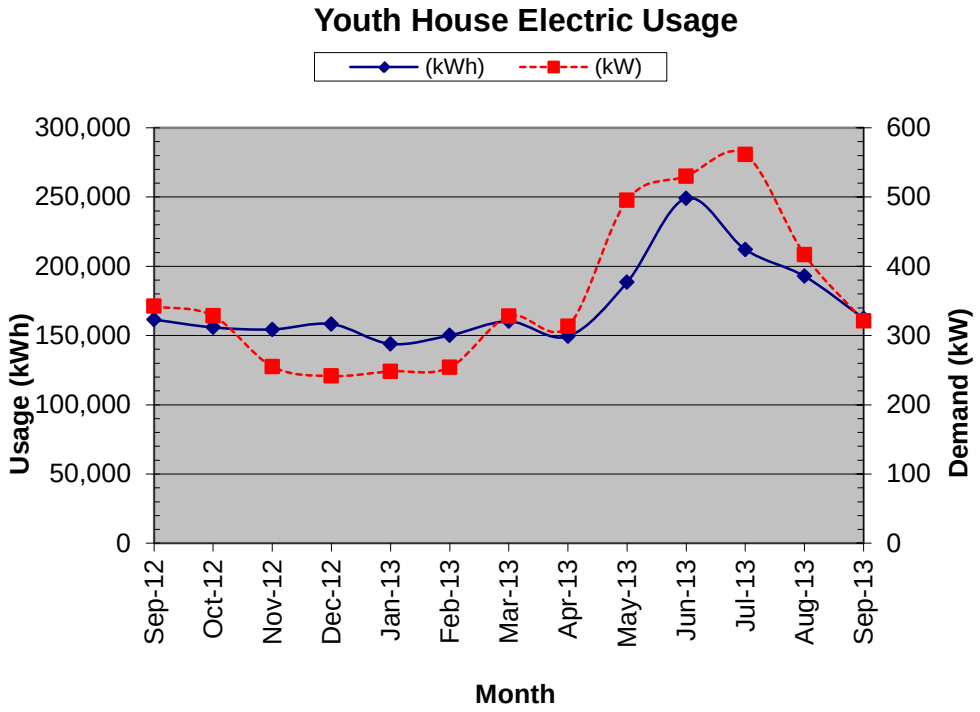
Utilities used by the building are delivered and supplied by the following utility companies:

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

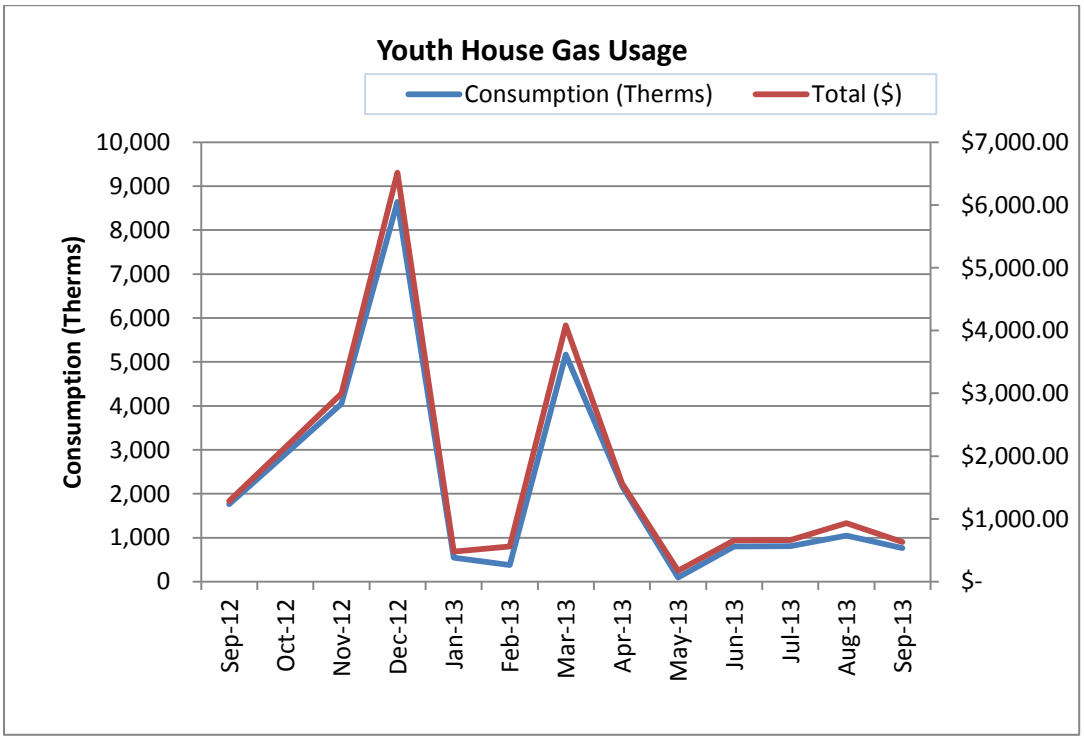
For the 12-month period ending in January 2014, the utilities usages and costs for the building were as follows:

Electric		
Annual Consumption	2,077,140	kWh
Annual Cost	315,570	$
Blended Unit Rate	0.152	$/kWh
Supply Rate	0.145	$/kWh
Demand Rate	3.53	$/kW
Peak Demand	561.3	kW
Natural Gas		
Annual Consumption	27,376	Therms
Annual Cost	21,393	$
Unit Rate	0.781	$/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 is fairly consistent with the building usage. The usage is higher in the summer season because of the AC units.



The natural gas usage in this building is for heating and domestic hot water heating. Therefore there is relative small usage in the summer months. The usage in winter is pretty consistent except January and February and it is believed that the January and February usage data were missing. The gas usage during the heating season is correlated to winter weather conditions.

See Appendix A for utility analysis.

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

Comparison of Utility Rates to NJ State Average Rates*				Recommended to Shop for Third Party Supplier?
Utility	Units	Average Rate	NJ Average Rate	
Electricity	$/kWh	$0.15	$0.13	Y
Natural Gas	$/Therm	$0.78	$0.96	N

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

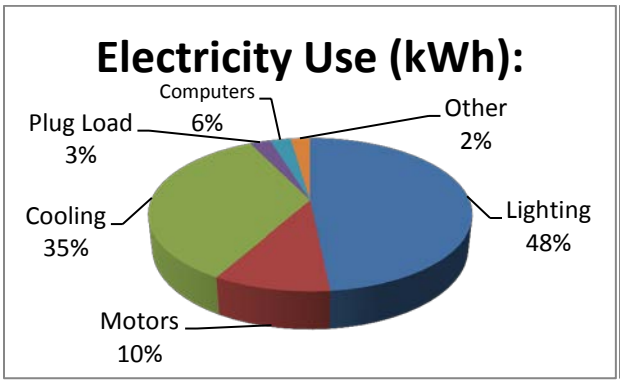
Additional information on selecting a third party energy supplier is available here:

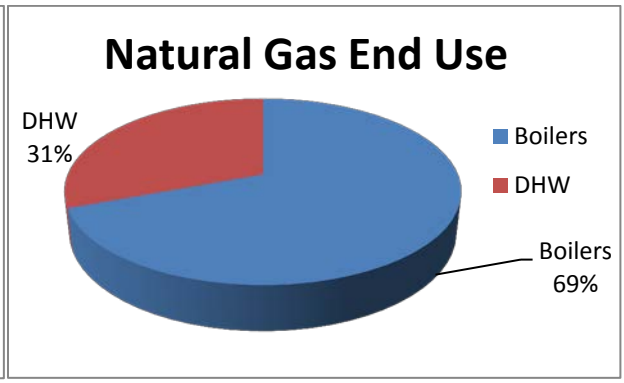
http://www.state.nj.us/bpu/commercial/shopping.html.

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

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

Site End-Use Utility Profile





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/ft^2/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/ft^2/yr	Source EUI (kBtu/ft^2/yr)	Energy Star Rating (1-100)
93.6	239.3	N/A

The building has higher EUIs than the national median EUIs (national median site EUI is 66.4 kBtu/ft^2 and national median source EUI is 169.9 kBtu/ft^2), and the EUI could be reduced by implementing some of recommended energy saving measures.

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 Add a Condensing Gas Boiler

The existing two Weil-McLain heating hot water boilers are used to provide heating hot water for the heating coils in the building. The boilers have a rated 2,396 MBH input and 1,904 MBH output which results in a nameplate efficiency of 79.5%.New modulating condensing gas boilers are available that minimally operate at 88%, and can operate as high as 96%. This ECM assesses adding one modulating condensing gas boiler. The condensing boiler will be the primary boiler using the two existing "standard" boilers as backup.

To implement this ECM, install the new condensing boilers in the mechanical room at the near location of the old boilers. Piping, venting and wiring modifications would be needed.

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

ECM-1 Add a Condensing Gas Boiler

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
67,463	0	0	2,612	2,040	(0.2)	3,500	33.1	31.4

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

This measure is recommended since the overall payback including this measure is favorable.

5.2 ECM-2 Install VFDs on the Chilled Water Pump Motors

The CHW loop is currently circulated by (2) 20 HP pumps that run at constant speed. Installing VFDs and two-way control valves will save energy when full load operation is not required. As the cooling load is reduced and the two-way valves on the CHW coils close, the VFD will slow the motor down to maintain the required system pressure and the energy consumption of the chilled water pump motors will be reduced.

The savings of this measure are calculated from the motor speed reduction the results when the CHW system is only partially loaded. The load percentage of the pumps is calculated by estimating the percentage of two-way valves open in each temperature bin. Therefore, partial energy savings in each bin can be calculated as the difference between the energy drawn by the full-load old motors and the energy drawn by the VFD driven motors.

Implementation of this measure will require installation of VFDs, two-way valves at the 5 RTUs, and appropriate controls equipment. In addition, some small piping modifications and control programming will be needed to allow the system to operate with variable flow.

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

ECM-2 Install VFDs on the Chilled Water Pump Motors

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
23,839	0	21,208	0	3,075	1.0	2,400	7.8	7.0

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

This measure is recommended.

5.3 ECM-3 Central DDC System Retro-commissioning and VAV System Recalibrating

The building is equipped with a Barber Coleman central direct digital control (DDC) system. As observed during the site visit, however, the integration and functionality of the system with respect to building systems could be improved. In discussions with the facility staff, it was also noted that some VAV boxes did not function properly. Therefore, VAV system calibration is also recommended.

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

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

- Calibrate the indoor and outdoor building sensors. Calibration of room thermostats, duct thermostats, humidistats, and pressure and temperature sensors should be in accordance with the original design specifications. Calibrating these controls may require specialized skills or equipment and may require outside expertise.
- Inspect damper and valve controls to verify proper functioning. Dampers should also be examined for proper opening and closing. Stiff dampers can cause improper modulation of the amount of outside air being used in the supply airstream. In some cases, dampers may be wired in a single position or disconnected, violating minimum outside air requirements.
- Review building operating schedules. HVAC controls must be adjusted to heat and cool the building properly during occupied hours. Occupancy schedules can change frequently over the life of a building, and control schedules should be adjusted accordingly. When the building is unoccupied, the temperature should be set back to save heating or cooling energy; however, minimal heating and cooling may be required when the building is unoccupied. In cold climates, for example, heating may be needed to keep water pipes from freezing.

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

ECM-3 Central DDC System Retro-commissioning and VAV System Recalibrating

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
45,791	0	87,823	1,896	14,830	3.9	0	3.1	3.1

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

This measure is recommended.

5.4 ECM-4 Replace DHW Boiler with Condensing DHW Boiler

Domestic hot water is provided by a gas fired Weil-McLain DHW boiler which has a rated 1,904 MBH heating capacity and 79.5% efficiency. The hot water is stored in two 1,000 gallon storage tanks. Energy savings could be realized by replacing this boiler with a high efficiency condensing gas fired boiler, which can operate at efficiencies up to 96%.

Savings were calculated based on the DHW supply temperature, estimated DHW usage, and standby heat loss from the storage tank. Standby heat loss from the storage tank was evaluated based on the tank size and Department of Energy's averaged heat loss rate for hot water tanks. The efficiency of the gas-fired condensing boiler is 96% per manufacturer's data. Implementation of this measure will require installation of the gas fired condensing boiler, gas pipe, piping and valves, and venting for flue gas exhausting.

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

ECM-4 Replace DHW Boiler with Condensing DHW Boiler

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
47,820	0	0	1,402	1,095	(0.7)	2,625	43.7	41.3

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

This measure is recommended since the overall payback including this measure is favorable.

5.5 ECM-5 Replace Pool Water Heater with Condensing Water Heater

The facility also has an outdoor pool which is equipped with pool heater which has a rated energy input of 400 MBH and about 80% efficiency. Energy savings could be realized by replacing this heater with a high efficiency condensing gas fired heaters, which can operate at efficiencies up to 96%.

Savings were calculated based on the efficiency difference between the existing pool heater and the proposed condensing pool heater.The efficiency of the gas-fired condensing heater is 94% per manufacturer's data. Implementation of this measure will require installation of the gas fired condensing water heaters, gas pipes, gas regulators, and PVC pipes for flue gas exhausting.

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

ECM-5 Replace Pool Water Heater with Condensing Water Heater

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
4,121	0	0	140	109	(0.6)	70	37.7	37.0

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

This measure is not recommended.

5.6 ECM-6 Install Walk-in Cooler/Freezer Control

The kitchen contains (2) walk-in coolers and (1) walk-in freezer. The units are controlled to maintain box temperature and runs continuously throughout the day. Installing a CoolTrol® Cooler Control System was assessed. The system will monitor both dry and wetbulb temperature within the cooler/freezer and allow evaporators and compressors to modulate up and down based on enthalpy setpoints rather than by dry bulb temperature alone. Savings are a result of reduced run time of evaporator fans, compressors and door heaters.

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

ECM-6 Install Walk-in Cooler/Freezer Control

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
20,625	0	9,338	0	1,419	0.0	0	14.5	14.5

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

This measure is recommended.

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

The dishwasher uses a 8kW electric booster heater for the dishwashing machine. The facility uses this dishwasher almost every day according to kitchen staff. Utilizing less expensive natural gas for the heater is assessed.

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

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

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

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
15,100	8	2,345	-100	601	(0.4)	30	25.1	25.1

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

This measure is not recommended.

5.8 ECM-8 Replace Plumbing Fixtures with Low Flow Fixtures

The plumbing fixtures in this building are 1997 fixtures. The water savings associated from replacing existing flow fixtures with modern low-flow fixtures was calculated by taking the difference of the annual water usage for the proposed and base case. The basis of this calculation is the estimate usage of each fixture, gallons per use, and number of fixtures. Replacing the existing fixtures in the restrooms with 1.28 Gals/flush toilets, 1.0 gal/flush urinals, and 0.5 gpm faucets will conserve water which will result in lower annual water and sewer charges. It is also recommended that the facility consider installing flush valves in remote locations and a central control system for keeping the plumbing system more secure and functioning properly.

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

ECM-8 Replace Plumbing Fixtures with Low Flow Fixtures

Budgetary Cost	Annual Utility Savings					ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Water	Total				
$	kW	kWh	Therms	kGal	$		$	Years	Years
660,016	0	0	2,506	241	3,763	(0.9)	0	175.4	175.4

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

This measure is not recommended.

5.9.1 ECM-L1 Lighting Replacement / Upgrades

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

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

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

ECM-L1 Lighting Replacement / Upgrades

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
252,830	48	265,546	0	40,555	1.5	51,770	6.2	5.0

* 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.

5.9.2 ECM-L2 Install Lighting Controls (Occupancy Sensors)

Presently, all interior lighting fixtures 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	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
16,200	0	11,829	0	1,715	0.7	2,100	9.4	8.2

* 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.

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

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

ECM-L3 Lighting Replacements with Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)
	Electricity		Natural Gas	Total				
$	kW	kWh	Therms	$		$	Years	Years
269,030	48	270,583	0	41,285	1.4	53,870	6.5	5.2

* 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.

5.10 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:

- Look for the ENERGY STAR® label when purchasing Window AC units or Kitchen Appliances
- Develop an Energy Master Plan to measure and track energy performance

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 county wishes to and is eligible to participate in the Energy Savings Improvement Plan (ESIP) program and/or the Pay for Performance Incentive Program (P4P), it cannot participate in either the Smart Start or Direct Install Programs. Refer to Appendix D for more information on the Smart Start program.

6.1.1 New Jersey Smart Start Program

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

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

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

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

6.1.2 Direct Install Program

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

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

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

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

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

Refer to Appendix D for more information on this program.

6.1.3 New Jersey Pay For Performance Program (P4P)

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

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

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

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

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

<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.

Gas

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

Incentive cap: 25% of total project cost

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

Electric

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

Gas

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

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

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

6.1.4 Energy Savings Improvement Plan

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

ESIP allows local units to use "energy savings obligations" (ESO) to pay for the capital costs of energy improvements to their facilities. ESIP loans have a maximum loan term of 15 year. ESOs are not considered "new general obligation debt" of a local unit and do not count against debt limits or require voter approval. They may be issued as refunding bonds or leases. Savings generated from the installation of energy conservation

measures pay the principal of and interest on the bonds; for that reason, the debt service created by the ESOs is not paid from the debt service fund, but is paid from the general fund.

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

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

6.1.5 Renewable Energy Incentive Program

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

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

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

7.0 ALTERNATIVE ENERGY SCREENING EVALUATION

7.1 Solar

7.1.1 Photovoltaic Rooftop Solar Power Generation

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

Available Roof Area (Ft^2)	Potential PV Array Size (kW)
15,903	60

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 (building) 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 $180/SREC for 2014 and this number was utilized in the cash flow for this report.

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

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

Photovoltaic (PV) Rooftop Solar Power Generation – 60.0 kW System

Budgetary Cost	Annual Utility Savings			Total Savings	New Jersey Renewable SREC	Payback (without SREC)	Payback (with SREC)	Recommended
	Electricity		Natural Gas					
$	kW	kWh	Therms	$	$	Years	Years	Y/N
$240,000	60.0	76,493	0	$12,927	$13,004	18.6	9.3	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 building district should consult with a certified solar PV contractor.

7.1.2 Solar Thermal Hot Water Generation

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

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

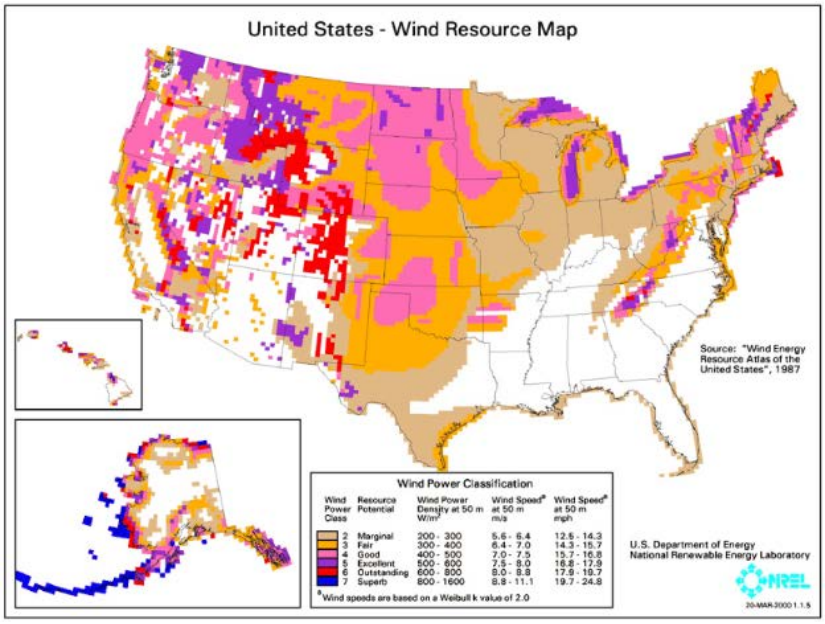
Several options exist for using active solar thermal systems for space heating. The most common method is called a passive solar hot water system involves using glazed collectors to heat a liquid held in a storage tank (similar to an active solar hot water system described above which requires pumping). The most practical system would transfer the heat from the panels to thermal storage tanks and then use the pre-heated water for domestic hot water production. DHW is presently produced by natural gas fired water heaters and, therefore, this measure would offer natural gas utility savings.

In discussions with the facility staff, it was noted that the solar hot water system may be damaged by the people in the building due to the function of the building and the pool maintenance is a problem. Therefore, this measure is not recommended due to the facility maintenance difficulty.

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 and the summer. An

absorption chiller could be installed to utilize the heat to produce chilled water. The most viable selection for a CHP plant at this location would be a reciprocating engine natural gas-fired unit. Purchasing this system and performing modifications to the existing HVAC and electrical systems would greatly outweigh the savings over the life of the equipment.

The CHP screening analysis was conducted utilizing the characteristics of the site before any of the ECMs described above are implemented. If any of the ECMs are implemented, the feasibility of installing a CHP system is reduced and the payback would likely be slightly extended.

Combined Heat and Power (CHP) – 300kW

Budgetary Cost	Annual Utility Usage		Total Savings	New Jersey Incentive	Payback (without Incentive)	Payback (with Incentive)	Recommended
	Existing Utility Cost	CHP Operating Cost					
$	$	$	$	$	Years	Years	Y/N
1,368,000	336,963	263,410	73,553	600,000	18.6	10.4	FS

This measure recommended for further study—see details Appendix E.

Although NJBPU LGEA program offers potential incentive for this measure as outlined above, the exact value must be determined by NJBPU. The savings outlined are evaluated at a screening level and should be refined during the design phase. It is recommended that Essex County pursue a more detailed CHP feasibility study to provide a more accurate depiction of the proposed CHP system to allow for application for incentives. The energy savings and implementation costs for this analysis have not been included in the project totals.

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 February 2013 through January 2014 the following table summarizes the electricity load profile for the building.

Building Electric Load Profile

Peak Demand kW	Min Demand kW	Avg Demand kW	Onsite Generation Y/N	Eligible? Y/N
561.3	248.3	393.4	N	Y

*the demand is estimated from one month bill

This measure is not recommended due to the lack of onsite power generators.

8.0 CONCLUSIONS & RECOMMENDATIONS

The following section summarizes the LGEA energy audit conducted by CHA for the Youth House in Essex County.

The following projects should be considered for implementation:

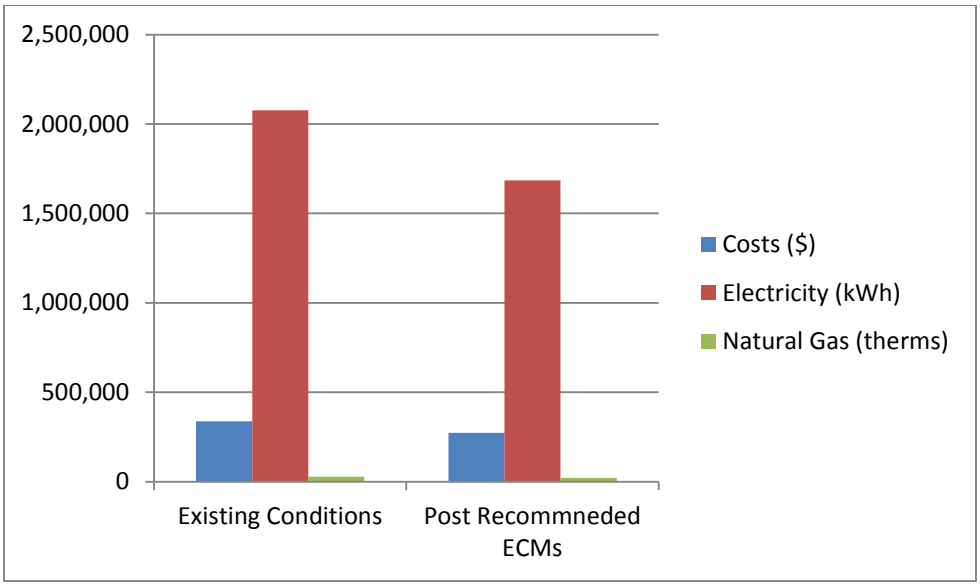
- Add a Condensing Gas Boiler
- Install VFDs on the Chilled Water Pump Motors
- Central DDC System Retro-commissioning and VAV System Recalibrating
- Replace DHW Boiler with Condensing DHW Boiler
- Install Walk-in Cooler/Freezer Control
- Lighting Replacements with Controls (Occupancy Sensors)

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)
388,951	5,911	63,744	7.4

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

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs ($)	336,963	273,218	19%
Electricity (kWh)	2,077,140	1,688,189	19%
Natural Gas (therms)	27,376	21,465	22%
Site EUI (kbtu/SF/Yr)	93.6	75.3	



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

APPENDIX A

Utility Usage Analysis and Alternate Utility Suppliers

Essex County
Youth House Electric Usage

Annual Utilities

12-month Summary

Electric		
Annual Usage	2,077,140	kWh/yr
Annual Cost	315,570	$
Blended Rate	0.152	$/kWh
Consumption Rate	0.145	$/kWh
Demand Rate	3.53	$/kW
Peak Demand	561.3	kW
Min. Demand	248.3	kW
Avg. Demand	393.4	kW
Natural Gas		
Annual Usage	27,376	therms/yr
Annual Cost	21,393	$
Rate	0.781	$/therm

Essex County
Youth House

Utility Bills: Account Numbers

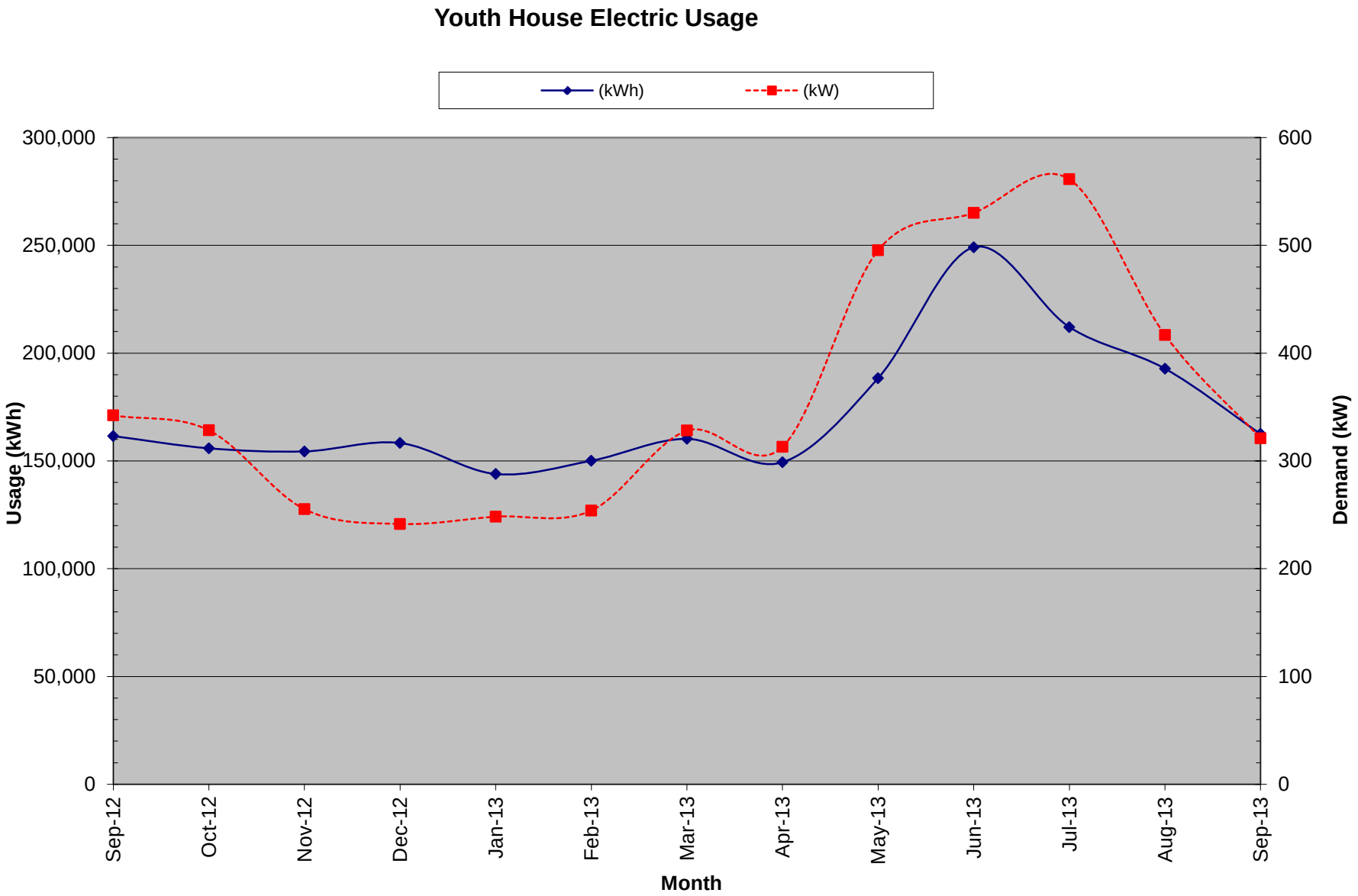
Account Number	Building Name	Location	Type	Notes
4206753407	Youth House	70 Duryea Street, Newark, NJ, 07102	Electricity	
6591766804	Youth House	71 Duryea Street, Newark, NJ, 07102	Natural Gas	

Essex County
Youth House Electric Usage

For Service at:
Account No.: **4206753407** **Delivery -** PSE&G
Meter No.: **778015417** **Supplier -** N/A
Electric Service

			Provider Charges			Usage (kWh) vs. Demand (kW) Charges		Unit Costs		
Month	Consumption (kWh)	Demand (kW)	Delivery ($)	Supplier ($)	Total ($)	Consumption ($)	Demand ($)	Blended Rate ($/kWh)	Consumption ($/kWh)	Demand ($/kW)
September-12	161,534	342.20	6,359.70	16,961.07	23,320.77	22,127.66	1,193.11	0.14	0.14	3.49
October-12	155,855	328.40	6,107.33	16,364.78	22,472.11	21,327.11	1,145.00	0.14	0.14	3.49
November-12	154,410	255.20	5,796.30	16,213.05	22,009.35	21,119.57	889.78	0.14	0.14	3.49
December-12	158,296	241.50	5,924.59	16,621.08	22,545.67	21,697.31	848.36	0.14	0.14	3.51
January-13	143,942	248.30	5,463.77	15,113.91	20,577.68	19,697.60	880.08	0.14	0.14	3.54
February-13	150,078	253.90	5,500.76	15,758.19	21,258.95	20,359.03	899.92	0.14	0.14	3.54
March-13	160,240	328.10	6,049.94	16,825.20	22,875.14	21,712.22	1,162.92	0.14	0.14	3.54
April-13	149,393	313.10	5,691.30	15,686.27	21,377.57	20,267.82	1,109.75	0.14	0.14	3.54
May-13	188,408	495.50	11,590.82	19,782.84	31,373.66	29,617.41	1,756.25	0.17	0.16	3.54
June-13	249,144	530.20	14,241.86	26,160.12	40,401.98	38,522.74	1,879.24	0.16	0.15	3.54
July-13	212,086	561.30	13,496.18	22,269.03	35,765.21	33,775.74	1,989.47	0.17	0.16	3.54
August-13	192,805	416.90	11,185.01	20,244.53	31,429.54	29,951.88	1,477.66	0.16	0.16	3.54
September-13	162,483	321.00	6,422.58	17,060.72	23,483.30	22,345.55	1,137.75	0.14	0.14	3.54
Total (All)	**2,238,674**	**561.30**	**$103,830.14**	**$235,060.77**	**$338,890.91**	**$322,521.62**	**$16,369.29**	**$0.151**	**$0.144**	**$3.53**
Total (12 Months)	**2,077,140**	**561.30**	**$97,470.44**	**$218,099.70**	**$315,570.14**	**$300,393.96**	**$15,176.18**	**$0.152**	**$0.145**	**$3.53**
Notes	1	2	3	4	5	6	7	8	9	10

1.) Number of kWh of electric energy used per month
2.) Number of kW of power measured
3.) Electric charges from Delivery provider
4.) Electric charges from Supply provider
5.) Total charges (Delivery + Supplier)
6.) Charges based on the number of kWh of electric energy used — $0.105 /kWh — Estimated supply rate due to missing data
7.) Charges based on the number of kW of power measured
8.) Total Charges ($) / Consumption (kWh)
9.) Consumption Charges ($) / Consumption (kWh)
10.) Demand Charges ($) / Demand (kW)

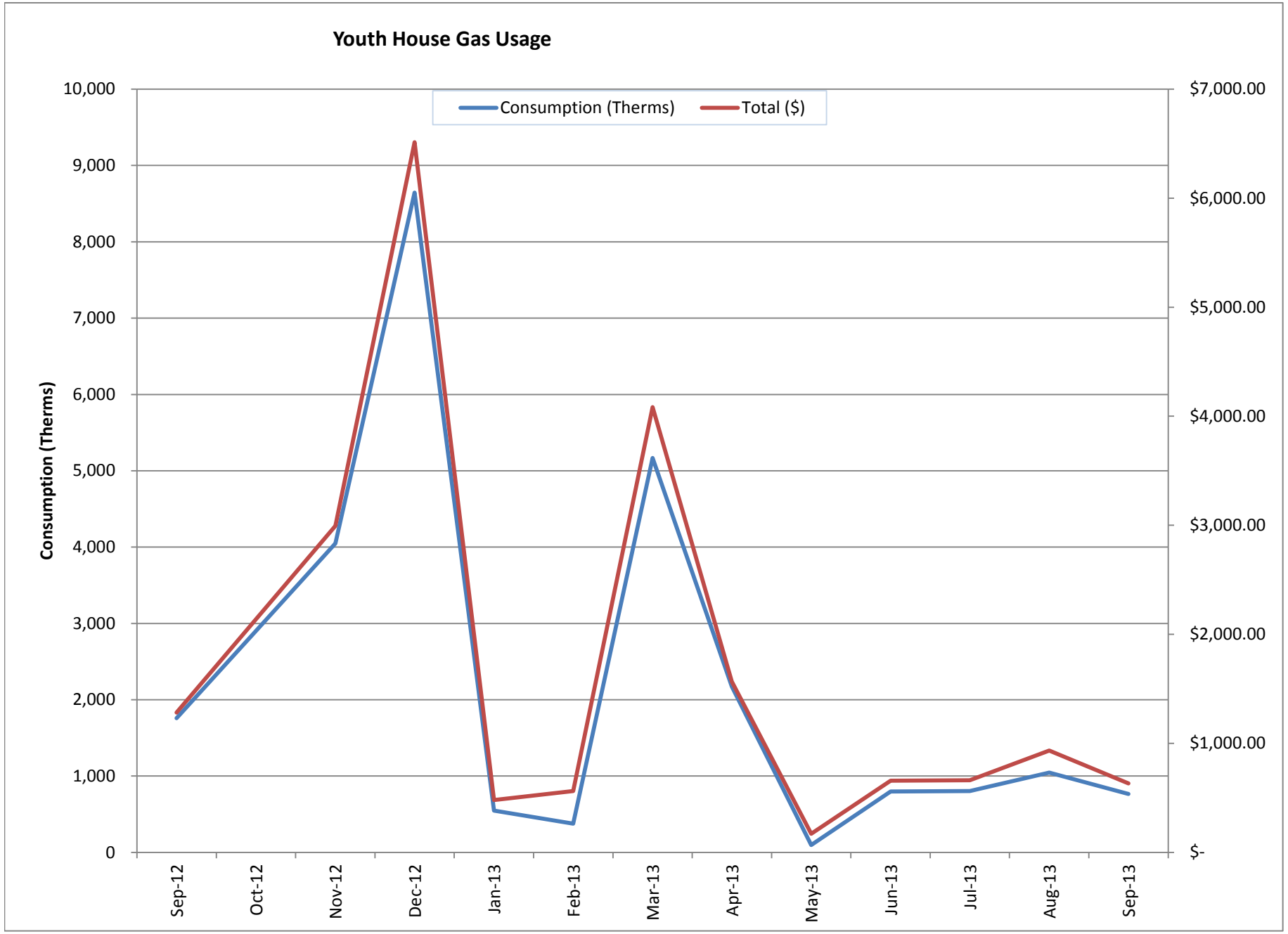


Youth House Utility Data.xlsx
Electric Graph

Essex County
Youth House Gas Usage

For Service at:
Account No.: **6591766804**
Meter No: **2643583**
Natural Gas Service **Delivery -** **PSE&G**
Supplier - **HESS**

		Charges			Unit Costs		
Month	**Consumption (Therms)**	**Delivery ($)**	**Supply ($)**	**Total ($)**	**Delivery ($/Therm)**	**Supply ($/Therm)**	**Total ($/Therm)**
September-12	1,760	$314.39	$967.86	$ 1,282.25	$ 0.179	$ 0.550	$ 0.729
October-12	2,902	$542.15	$1,596.26	$ 2,138.41	$ 0.187	$ 0.550	$ 0.737
November-12	4,049	$767.59	$2,227.13	$ 2,994.72	$ 0.190	$ 0.550	$ 0.740
December-12	8,645	$1,758.15	$4,754.57	$ 6,512.72	$ 0.203	$ 0.550	$ 0.753
January-13	548	$177.99	$301.59	$ 479.58	$ 0.325	$ 0.550	$ 0.875
February-13	376	$354.71	$207.05	$ 561.76	$ 0.942	$ 0.550	$ 1.492
March-13	5,169	$1,239.86	$2,842.83	$ 4,082.69	$ 0.240	$ 0.550	$ 0.790
April-13	2,175	$369.69	$1,196.51	$ 1,566.20	$ 0.170	$ 0.550	$ 0.720
May-13	96	$117.88	$52.78	$ 170.66	$ 1.228	$ 0.550	$ 1.778
June-13	798	$218.80	$438.82	$ 657.62	$ 0.274	$ 0.550	$ 0.824
July-13	805	$219.84	$442.83	$ 662.67	$ 0.273	$ 0.550	$ 0.823
August-13	1,047	$357.38	$575.59	$ 932.97	$ 0.341	$ 0.550	$ 0.891
September-13	765	$212.07	$420.57	$ 632.64	$ 0.277	$ 0.550	$ 0.827
Total (All)	**29,135.25**			**22,674.89**			**$ 0.778**
Total (12 Months)	**27,375.51**			**21,392.64**			**$ 0.781**


Youth House Gas Usage
Consumption (Therms)
Total ($)
Consumption (Therms)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
$7,000.00
$6,000.00
$5,000.00
$4,000.00
$3,000.00
$2,000.00
$1,000.00
$-
Sep-12
Oct-12
Nov-12
Dec-12
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13
Sep-13

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

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

Compass Energy Gas Services, LLC 33 Wood Avenue South Suite 610 Iselin, NJ 08830	866-867-8328 www.compassenergy.net	**C/I** **ACTIVE**
ConocoPhillips Company 224 Strawbridge Drive, Suite 107 Moorestown, NJ 08057	800-646-4427 www.conocophillips.com	**C/I** **ACTIVE**
Consolidated Edison Energy, Inc. **d/b/a Con Edison Solutions** 535 State Highway 38, Suite 140 Cherry Hill, NJ 08002	888-686-1383 x2130 www.conedenergy.com	
Consolidated Edison Solutions, Inc. Cherry Tree Corporate Center 535 State Highway 38, Suite 140 Cherry Hill, NJ 08002	888-665-0955 www.conedsolutions.com	**C/I** **ACTIVE**
Constellation NewEnergy-Gas Division, LLC 116 Village Boulevard, Suite 200 Princeton, NJ 08540	800-785-4373 www.constellation.com	**C/I** **ACTIVE**
Constellation Energy Gas Choice, Inc. 116 Village Blvd., Suite 200 Princeton, NJ 08540	800-785-4373 www.constellation.com	**R/C/I** **ACTIVE**
Direct Energy Business, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	888-925-9115 http://www.business.directenergy.com/	**R** **ACTIVE**
Direct Energy Business Marketing, LLC (fka Hess Energy Marketing) One Hess Plaza Woodbridge, NJ 07095	(800) 437-7872 http://www.business.directenergy.com/	**C/I** **ACTIVE**
Direct Energy Services, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	(888) 925-9115 www.directenergy.com	**R** **ACTIVE**

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

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

Noble Americas Energy Solutions The Mac-Cali Building 581 Main Street, 8th fl. Woodbridge, NJ 07095	877-273-6772 www.noblesolutions.com	**C/I** **ACTIVE**
North American Power & Gas, LLC d/b/a North American Power 197 Route 18 South Ste. 300 New Brunswick, NJ 08816	888- 313-8086 www.napower.com	**R/C/I** **ACTIVE**
North Eastern States, Inc. d/b/a Entrust Energy 90 Washington Valley Road Bedminster, NJ 07921	(888) 535-6340 www.entrustenergy.com	**R/C/I** **ACTIVE**
Oasis Power, LLC d/b/a Oasis Energy 11152 Westheimer, Suite 901 Houston, TX 77042	(800)324-3046 www.oasisenergy.com	**R/C** **ACTIVE**
Palmco Energy NJ, LLC One Greentree Centre 10,000 Lincoln Drive East, Suite 201 Marlton, NJ 08053	877-726-5862 www.PalmcoEnergy.com	**R/C/I** **ACTIVE**
Plymouth Rock Energy, LLC 338 Maitland Avenue Teaneck, NJ 07666	855-32-POWER (76937) www.plymouthenergy.com	**R/C/I** **ACTIVE**
PPL EnergyPlus, LLC Shrewsbury Executive Offices 788 Shrewsbury Avenue Suite 2200 Tinton Falls, NJ 07724	(732) 741-0505 www.pplenergyplus.com	**C/I** **ACTIVE**
PPL EnergyPlus Retail, LLC Shrewsbury Executive Offices 788 Shrewsbury Avenue, Suite 220 Tinton Falls, NJ 07724	(732) 741-0505 – 2000 www.pplenergyplus.com	**C/I** **ACTIVE**
Public Power & Utility of New Jersey, LLC One International Blvd, Suite 400 Mahwah, NJ 07495	(888) 354-4415 www.ppandu.com	**R/C/I** **ACTIVE**

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

Stream Energy New Jersey, LLC 309 Fellowship Road Suite 200 Mt. Laurel, NJ 08054	(877) 369-8150 www.streamenergy.net	**R/C** **ACTIVE**
Summit Energy Services, Inc. 10350 Ormsby Park Place Suite 400 Louisville, KY 40223	1 (800) 90-SUMMIT www.summitenergy.com	**C/I** **ACTIVE**
Systrum Energy 1 Bergen Blvd. Fairview, NJ 07022	877-797-8786 www.systrumenergy.com	**R/C/I** **ACTIVE**
Tiger Natural Gas, Inc. dba Tiger, Inc. 234 20th Avenue Brick, NJ 008724	888-875-6122 www.tigernaturalgas.com	**R/C/I** **ACTIVE**
UGI Energy Services, Inc. dba UGI Energy Link 224 Strawbridge Drive, Suite 107 Moorestown, NJ 08057	800-427-8545 www.ugienergylink.com	**C/I** **ACTIVE**
UGI Energy Services, Inc. d/b/a GASMARK 224 Strawbridge Drive, Suite 107 Moorestown, NJ 08057	856-273-9995 www.ugienergylink.com	**C/I** **ACTIVE**
Verde Energy USA, Inc. 2001 Route 46 Waterview Plaza, Suite 301 Parsippany, NJ 07054	800-388-3862 www.lowcostpower.com	**R/C** **ACTIVE**
Viridian Energy PA LLC 2001 Route 46, Waterview Plaza Suite 230 Parsippany, NJ 07054	866-663-2508 www.viridian.com	**R/C** **ACTIVE**
Vista Energy Marketing, L.P. 197 State Route 18 South, Suite 3000 South Wing East Brunswick, NJ 08816	888-508-4782 www.vistaenergymarketing.com	**R/C/I** **ACTIVE**
Woodruff Energy 73 Water Street Bridgeton, NJ 08302	800-557-1121 www.woodruffenergy.com	**R/C/I** **ACTIVE**

Woodruff Energy US LLC 73 Water Street, P.O. Box 777 Bridgeton, NJ 08302	856-455-1111 800-557-1121 www.woodruffenergy.com	**C/I** **ACTIVE**
XOOM Energy New Jersey, LLC 744 Broad Street. 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

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

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

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

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

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

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

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

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

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

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

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

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APPENDIX B

Equipment Inventory

CHA Project # 29142
Youth Center
Essex County

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
Boiler	2	Weil-McLain	888	N/A	HHW Boiler	2,396 MBH input and 1,904 MBH output	79.5% Eff.	Boiler Room	HHW Loop for HHW Coils and HHW Heaters	2002	13		2014	12	25
Pump Motor	2	US Motors	N959A	N/A	HHW Pump/Motor	7.5HP	84%	Boiler Room	HHW Loop for HHW Coils and HHW Heaters	2002	8		2014	12	20
DHW-1	1	Weil-McLain	888	N/A	Natural Gas DHW Heater	2,396 MBH input and 1,904 MBH output	79.5% Eff.	Boiler Room	The Whole Building	2002	8		2014	12	20
Chiller	2	Carrier	30RBB1906	1211Q75525	Air cooled scroll compressor chiller	190 ton	EER of 10.5	Roof	The Whole Building	2011	17		2014	3	20
RTU-1	1	McQuay	RAH047CLY	35J00658	RTU	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	N/A	Roof	Wing-1	2002	8		2014	12	20
RTU-2	1	McQuay	RAH047CLY	35J00659	RTU	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	N/A	Roof	Wing-2	2002	8		2014	12	20
RTU-3	1	McQuay	RAH047CLY	35J00660	RTU	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	N/A	Roof	Wing-3	2002	8		2014	12	20
RTU-4	1	McQuay	RAH047CLY	35J00661	RTU	RTU unit equipped with HHW coil and CHW coil, the 25HP supply fan and 7.5HP return fan are driven by VFDs	N/A	Roof	Wing-4	2002	8		2014	12	20
RTU-5	1	McQuay	RPS018BW	35J00662	RTU	RTU unit equipped with HHW coil and CHW coil, the supply fan and 5HP return fan are driven by VFDs	N/A	Roof	Gym	2002	8		2014	12	20
HP-1	1	Carrier	50LJQ006	N/A	HP	58.7MBH cooling capacity and 30.7 MBH heating capacity	9.25	Lower Roof	Offices	2002	8	Based on Mechanical Schedule due to inaccessibility to them	2014	12	20
HP-2	1	Carrier	50LJQ006	N/A	HP	58.7MBH cooling capacity and 30.7 MBH heating capacity	9.25	Lower Roof	Offices	2002	8	Based on Mechanical Schedule due to inaccessibility to them	2014	12	20
HP-3	1	Carrier	50LJQ006	N/A	HP	33.6MBH cooling capacity and 15 MBH heating capacity	9.4	Lower Roof	Offices	2002	8	Based on Mechanical Schedule due to inaccessibility to them	2014	12	20
HP-4	1	Carrier	50LJQ006	N/A	HP	37MBH cooling capacity and 10.2 MBH heating capacity	10	Lower Roof	Offices	2002	8	Based on Mechanical Schedule due to inaccessibility to them	2014	12	20
CHW pumps	2	Baldor	VJMM2334T	N/A	Pump Motor	20HP	90%	Roof	The Whole Building	2011	17		2014	3	20

Energy Audit of Essex County Youth House
CHA Project No.29142
Existing Lighting & Audit Input

Cost of Electricity: **$0.145** **$/kWh**
$3.53 **$/kW**

			EXISTING CONDITIONS									Retrofit Control	
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
146LED	Lower Level Floor Gym	Gymnasium	9	High Bay MH 400	MH400/1	458	4.12	SW	3640	15,004	NONE	
35LED	Weight Room	Gymnasium	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	3640	2,621	NONE	
35LED	Staff Lounge	Staff Lounge	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	4368	1,179	NONE	
35LED	Staff Lounge Toilet	Restroom	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	NONE	
32LED	Storage	Storage Areas	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	2912	349	C-OCC	
32LED	Toilet	Restroom	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Classroom	Classrooms	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	2912	2,097	NONE	
35LED	Classroom	Classrooms	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.26	SW	2912	3,669	NONE	
35LED	Storage	Storage Areas	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	C-OCC	
32LED	Toilet	Restroom	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	Wall Mounted
32LED	Storage	Storage Areas	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	C-OCC	
32LED	Storage	Storage Areas	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	C-OCC	
35LED	Computer Room	Classrooms	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	SW	2912	2,359	NONE	
35LED	Corridor	Hallways	21	T 32 R F 3 (ELE)	F43ILL/2	90	1.89	SW	8736	16,511	NONE	
35LED	Media Center	Classrooms	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	2912	1,835	NONE	
5LED	Media Center	Classrooms	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	2912	349	NONE	
35LED	Classroom	Classrooms	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	2912	1,835	NONE	
5LED	Classroom	Classrooms	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	2912	349	NONE	
35LED	Testing	Classrooms	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	2912	1,835	NONE	
5LED	Testing	Classrooms	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	2912	349	NONE	
35LED	Wood Shop	Classrooms	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.34	SW	2912	6,814	NONE	
35LED	Corridor	Hallways	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	SW	8736	7,076	NONE	
35LED	Office	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	4368	1,179	C-OCC	
35LED	Game	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	2912	3,145	NONE	
35LED	Storage	Storage Areas	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	2912	524	C-OCC	
32LED	Toilet	Restroom	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Lobby	Hallways	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	SW	8736	7,076	NONE	
32LED	Work Shop	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	2912	1,398	NONE	
32LED	Toilet	Restroom	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Corridor	Hallways	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	SW	8736	7,076	NONE	
35LED	Laundry	Laundry	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	2912	3,145	NONE	
32LED	Maintenance Storage	Storage Areas	7	1T 32 R F 2 (ELE)	F42LL	60	0.42	SW	2912	1,223	C-OCC	
20LED	Mechanical Room	Mechanical Room	20	S 28 P F 1 (ELE)	F41ILL	31	0.62	SW	2912	1,805	NONE	
20LED	Electric Room	Mechanical Room	10	S 28 P F 1 (ELE)	F41ILL	31	0.31	SW	2912	903	NONE	
35LED	Household Storage	Storage Areas	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.45	SW	2912	1,310	C-OCC	
35LED	Office B12	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	4368	1,572	C-OCC	
32LED	Janitor B14	Storage Areas	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	C-OCC	
35LED	Toilet	Restroom	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	NONE	
35LED	Kitchen	Kitchen	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	SW	2912	3,931	NONE	
32LED	Kitchen	Kitchen	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	2912	349	NONE	
35LED	Kitchen Storage	Storage Areas	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	2912	786	C-OCC	
35LED	Dining 1	Cafeteria	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	4368	4,717	NONE	
35LED	Dining 2	Cafeteria	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	SW	4368	4,717	NONE	
35LED	1st Floor Office G89	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	4368	1,179	C-OCC	
35LED	Office G99	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Office G100	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Office G101	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	4368	1,179	C-OCC	
35LED	Office G84	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	4368	1,179	C-OCC	
35LED	Office G85	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Office G86	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Office G87	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Office G88	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Corridor	Hallways	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	8736	5,504	NONE	
35LED	Reception	Hallways	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	8736	4,717	NONE	
35LED	Corridor	Hallways	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	8736	6,290	NONE	
35LED	G102	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	G103	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	G104	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	G105	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	G106	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	G93	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	G94	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	G95	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	4368	786	C-OCC	
35LED	Multipurpose Room	Classrooms	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.17	SW	2912	3,407	NONE	
5LED	Multipurpose Room	Classrooms	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	2912	175	NONE	
35LED	Meeting Room	Offices	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	4368	2,359	C-OCC	
35LED	Visitor Waiting Room	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	4368	1,572	C-OCC	
35LED	Toilet	Restroom	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	NONE	
35LED	Toilet	Restroom	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	NONE	
35LED	Visitor Sally Port	Offices	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.45	SW	4368	1,966	C-OCC	
35LED	Youth Sally Port	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	4368	1,572	C-OCC	

Energy Audit of Essex County Youth House
CHA Project No.29142
Existing Lighting & Audit Input

Cost of Electricity: $0.145 $/kWh
$3.53 $/kW

Field Code	Area Description Unique description of the location - Room number/Room name: Floor number (if applicable)	Usage Describe Usage Type using Operating Hours	EXISTING CONDITIONS No. of Fixtures No. of fixtures before the retrofit	Standard Fixture Code Lighting Fixture Code	Fixture Code Code from Table of Standard Fixture Wattages	Watts per Fixture Value from Table of Standard Fixture Wattages	kW/Space (Watts/Fixt) * (Fixt No.)	Exist Control Pre-inst. control device	Annual Hours Estimated annual hours for the usage group	Annual kWh (kW/space) * (Annual Hours)	Retrofit Control Retrofit control device	Notes
35LED	Holding G12	Offices	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.27	SW	4368	1,179	C-OCC	
5LED	Holding G12	Offices	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	4368	262	C-OCC	
35LED	Holding G14	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	Exam G14	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	Exam G15	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
5LED	Corridor	Hallways	16	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.96	SW	8736	8,387	NONE	
35LED	Interview Room	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	Interview Room	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	Storage	Storage Areas	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	2912	524	C-OCC	
35LED	Cloth Storage	Storage Areas	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	2912	1,572	C-OCC	
64LED	Loading Area	Outdoor Lighting	7	175 MH	MH175/1	215	1.51	SW	4368	6,574	NONE	
32LED	Receiving Area	Storage Areas	10	1T 32 R F 2 (ELE)	F42LL	60	0.60	SW	2912	1,747	C-OCC	
35LED	Dentist Exam	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	4368	1,572	C-OCC	
35LED	Doctor Exam	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	4368	1,572	C-OCC	
35LED	Nurse Station	Offices	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.81	SW	4368	3,538	C-OCC	
35LED	Nurse	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	Medical	Offices	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
35LED	Corridor	Hallways	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	8736	3,145	NONE	
5LED	Central Lobby	Hallways	13	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.78	SW	8736	6,814	NONE	
5LED	Sally Port	Hallways	5	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.30	SW	8736	2,621	NONE	
5LED	Reception	Hallways	10	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.60	SW	8736	5,242	NONE	
5LED	YSC Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Conference Room	Offices	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.36	SW	4368	1,572	C-OCC	
5LED	Director Office	Offices	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.36	SW	4368	1,572	C-OCC	
35LED	Men's Locker	Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	NONE	
5LED	Men's Locker	Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	2912	175	NONE	
32LED	Men's Locker	Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.18	SW	2912	524	NONE	
35LED	Women's Locker	Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	2912	262	NONE	
5LED	Women's Locker	Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	2912	175	NONE	
32LED	Women's Locker	Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.18	SW	2912	524	NONE	
35LED	Staff Lounge	Staff Lounge	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	4368	1,572	NONE	
35LED	Corridor	Hallways	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	8736	4,717	NONE	
5LED	Superintendent	Offices	7	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.42	SW	4368	1,835	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
5LED	Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	4368	1,048	C-OCC	
35LED	2nd Floor Lobby	Hallways	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	8736	5,504	NONE	
5LED	2nd Floor Lobby	Hallways	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.48	SW	8736	4,193	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	Locked
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	Locked
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	Locked
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	Locked
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	

Energy Audit of Essex County Youth House
CHA Project No.29142
Existing Lighting & Audit Input

Cost of Electricity: $0.145 $/kWh
$3.53 $/kW

			EXISTING CONDITIONS									
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Retrofit Control	
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	3rd Floor Lobby	Hallways	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	8736	5,504	NONE	
5LED	3rd Floor Lobby	Hallways	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.48	SW	8736	4,193	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	

Energy Audit of Essex County Youth House
CHA Project No.29142
Existing Lighting & Audit Input

Cost of Electricity: $0.145 $/kWh
$3.53 $/kW

			EXISTING CONDITIONS									
	Area Description	**Usage**	**No. of Fixtures**	**Standard Fixture Code**	**Fixture Code**	**Watts per Fixture**	**kW/Space**	**Exist Control**	**Annual Hours**	**Annual kWh**	**Retrofit Control**	
Field Code	**Unique description of the location - Room number/Room name: Floor number (if applicable)**	**Describe Usage Type using Operating Hours**	**No. of fixtures before the retrofit**	**Lighting Fixture Code**	**Code from Table of Standard Fixture Wattages**	**Value from Table of Standard Fixture Wattages**	**(Watts/Fixt) * (Fixt No.)**	**Pre-inst. control device**	**Estimated annual hours for the usage group**	**(kW/space) * (Annual Hours)**	**Retrofit control device**	**Notes**
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	4th Floor Lobby	Hallways	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.63	SW	8736	5,504	NONE	
5LED	4th Floor Lobby	Hallways	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.48	SW	8736	4,193	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
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32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	

Energy Audit of Essex County Youth House
CHA Project No.29142
Existing Lighting & Audit Input

Cost of Electricity: $0.145 $/kWh
$3.53 $/kW

			EXISTING CONDITIONS								Retrofit Control	
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	Retrofit control device	Notes
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
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32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
35LED	Wing Lobby	Hallways	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	8736	12,580	NONE	
5LED	Wing Lobby	Hallways	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	8736	1,048	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
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32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
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32LED	Cell	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2912	175	NONE	
143LED	Outdoor Lighting	Outdoor Lighting	12	HPS 100 POLE	HPS100/1	138	1.66	SW	4368	7,233	NONE	
								SW				
	Total		1,039				84.29			459,627		

APPENDIX C

ECM Calculations

Essex County - Youth House
CHA Project Number: 29142

Rate of Discount (used for NPV) 3.0%

Utility Costs		Yearly Usage	Metric Ton Carbon Dioxide Equivalent	Building Area	Annual Utility Cost		
$ 0.152	$/kWh blended		0.000420205	105,000	Electric	Natural Gas	Fuel Oil
$ 0.145	$/kWh supply	2,077,140	0.000420205		$ 315,570	$ 21,393	
$ 3.53	$/kW	561.3	0				
$ 0.78	$/Therm	27,376	0.00533471				
Estimated $ 7.50	$/kgals		0				
	$/Gal						

Essex County - Youth House

Recommend? Y or N		Item	Savings kW	kWh	therms	No. 2 Oil gal	Water kgal	$	Cost	Simple Payback	Life Expectancy	Equivalent CO_2 (Metric tons)	NJ Smart Start Incentives	Direct Install Eligible (Y/N)	Payback w/ Incentives	Simple Projected Lifetime Savings kW	kWh	therms	kgal/yr	$	ROI	NPV	IRR
Y	ECM-1	Add a Condensing Gas Boiler	0.0	0	2,612	0	0	2,040	$ 67,463	33.1	25	13.9	$ 3,500	N	31.4	0.0	0	65,310	0	$ 51,007	(0.2)	($28,435)	-1.7%
Y	ECM-2	Install VFDs on the Chilled Water Pump Motors	0.0	21,208	0	0	0	3,075	$ 23,839	7.8	15	8.9	$ 2,400	N	7.0	0.0	318,118	0	0	$ 48,354	1.0	$15,272	11.6%
Y	ECM-3	Central DDC System Retro-commissioning and VAV System Recalibrating	0.0	87,823	1,896	0	0	14,830	$ 45,791	3.1	15	47.0	$ -	N	3.1	0.0	1,317,343	28,443	0	$ 222,450	3.9	$131,249	31.9%
Y	ECM-4	Replace the DHW Boiler with Condensing DHW Boiler	0.0	0	1,402	0	0	1,095	$ 47,820	43.7	15	7.5	$ 2,625	N	41.3	0.0	0	21,035	0	$ 16,428	(0.7)	($32,120)	-10.6%
N	ECM-5	Replace Pool Water Heater with Condensing Water Heater	0.0	0	140	0	0	109	$ 4,121	37.7	15	0.7	$ 70	N	37.0	0.0	0	2,100	0	$ 1,640	(0.6)	($2,745)	-9.6%
Y	ECM-6	Install Walk-in Cooler/Freezer Control	0.0	9,338	0	0	0	1,419	$ 20,625	14.5	15	3.9	$ -	N	14.5	0.0	140,068	0	0	$ 21,290	0.0	($3,681)	0.4%
N	ECM-7	Replace Dishwasher Electric Booster Heater with Gas Booster Heater	8.0	2,345	(100)	0	0	601	$ 15,100	25.1	15	0.5	$ 30	N	25.1	120.0	35,170	(1,500)	0	$ 9,258	(0.4)	($7,898)	-5.8%
N	ECM-8	Replace Plumbing Fixtures with Low Flow Fixtures	0	0	2,506	0	241	3,763	$ 660,016	175.4	15	13.4	$ -	N	175.4	0.0	0	37,591	3,612	$ 56,451	(0.9)	($615,089)	-21.7%
N	ECM-L1	Lighting Replacements / Upgrades	48	265,546	0	0	0	40,555	$ 252,830	6.2	15	111.6	$ 51,770	N	5.0	726.3	3,983,190	0	0	$ 636,210	1.5	$283,085	18.6%
N	ECM-L2	Install Lighting Controls (Add Occupancy Sensors)	0	11,829	0	0	0	1,715	$ 16,200	9.4	15	5.0	$ 2,100	N	8.2	0.0	177,435	0	0	$ 26,970	0.7	$6,376	8.7%
Y	ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	48	270,583	0	0	0	41,285	$ 269,030	6.5	15	113.7	$ 53,870	N	5.2	726.3	4,058,738	0	0	$ 647,693	1.4	$277,703	17.5%
		Total (Does Not Include ECM-L1 & ECM-L2)	**56.4**	**391,296**	**8,457**	**0**	**241**	**$ 68,219**	**$ 1,153,804**	**16.9**	**16.1**	**210**	**$ 62,495**		**16.0**	**846**	**5,869,436**	**152,979**	**3,612**	**$ 1,074,571**	**(0.1)**	**(265,745)**	**0.0%**
		Recommended Measures (highlighted green above)	**48.4**	**388,951**	**5,911**	**0**	**0**	**$ 63,744**	**$ 474,567**	**7.4**	**16.7**	**195**	**$ 62,395**	**0**	**6.5**	**726**	**5,834,266**	**114,788**	**-**	**$ 1,007,223**	**1.1**	**359,988**	**13.4%**
		% of Existing	**9%**	**19%**	**22%**	**0**	**0**																

City:	Newark, NJ					
Occupied Hours/Week	168					
	Building Operating Hours	Auditorium Occupied Hours	Gymnasium Occupied Hours	Library Occupied Hours	Classrooms Occupied Hours	

Temp	Enthalpy h (Btu/lb)	Bin Hours					
102.5							
97.5	35.4	6	6	0	0	0	0
92.5	37.4	31	31	0	0	0	0
87.5	35.0	131	131	0	0	0	0
82.5	33.0	500	500	0	0	0	0
77.5	31.5	620	620	0	0	0	0
72.5	29.9	664	664	0	0	0	0
67.5	27.2	854	854	0	0	0	0
62.5	24.0	927	927	0	0	0	0
57.5	20.3	600	600	0	0	0	0
52.5	18.2	730	730	0	0	0	0
47.5	16.0	491	491	0	0	0	0
42.5	14.5	656	656	0	0	0	0
37.5	12.5	1,023	1,023	0	0	0	0
32.5	10.5	734	734	0	0	0	0
27.5	8.7	334	334	0	0	0	0
22.5	7.0	252	252	0	0	0	0
17.5	5.4	125	125	0	0	0	0
12.5	3.7	47	47	0	0	0	0
7.5	2.1	34	34	0	0	0	0
2.5	1.3	1	1	0	0	0	0
-2.5							
-7.5							

Multipliers	
Material:	1.027
Labor:	1.246
Equipment:	1.124

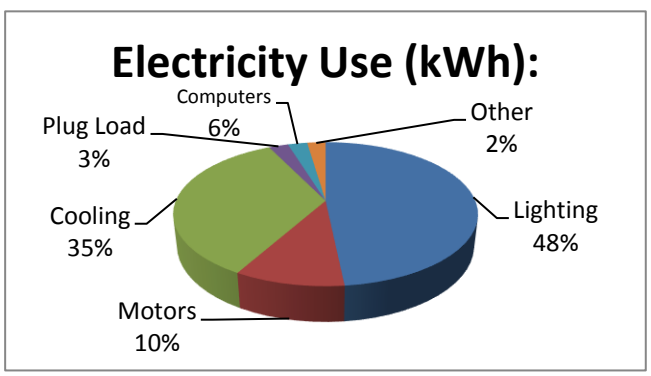
Heating System Efficiency	80%
Cooling Eff (kW/ton)	1.3

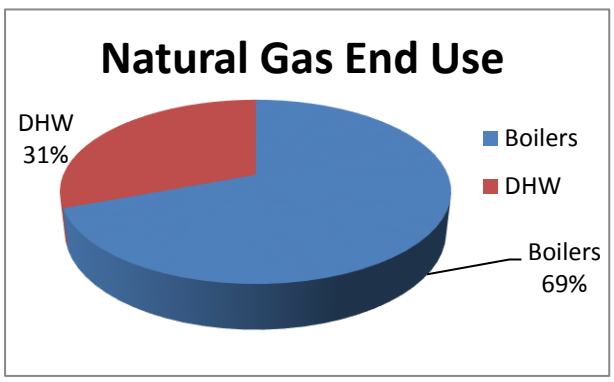
Heating		
Hours	4,427	Hrs
Weighted Avg	40	F
Avg	28	F

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

Utility End Use Analysis			
Electricity Use (kWh):		**Notes/Comments:**	
2,077,140	Total	Based on utility analysis	
980,000	Lighting	From Lighting Calculations	47%
200,000	Motors	Estimated	10%
700,000	Cooling	Estimated	34%
50,000	Plug Load	Estimated	2%
50,000	Computers	Estimated	2%
47,140	Other	Remaining	2%
Natural Gas Use (Therms):		**Notes/Comments:**	
27,376	Total	Based on utility analysis	
18,962	Boilers	Therms/SF x Square Feet Served	69%
8,414	DHW	Based on utility analysis	31%





Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-1 Add a Condensing Gas Boiler

Description: This ECM evaluates adding a high efficiency condensing gas boiler as the main boiler. The existing boiler efficiency is 80% (per NJBPU protocals) and the proposed boiler efficiency is 90% (average seasonal efficiency). Electrical power consumption due to pumps is considered to be the same for both the proposed system and the baseline system.

Item	Value	Units	Formula/Comments
Baseline Fuel Cost	$ 0.78	/ Therm	Natural Gas
Baseline Fuel Cost		/ Gal	No. 2 Oil
FORMULA CONSTANTS			
Oversize Factor	0.8		
Hours per Day	24		
Infrared Conversion Factor	1.0		1.0 if Boiler, 0.8 if Infrared Heater
EXISTING			
Capacity	2,000,000	btu/hr	Estimated Boiler Load % and Capacity
Heating Combustion Efficiency	80%		Estimated averaged Efficiency
Heating Degree-Day	2,792	Degree-day	
Design Temperature Difference	57	F	
Fuel Conversion	100,000	btu/therm	
PROPOSED			
Capacity	2,000,000	btu/hr	
Efficiency	90%		
SAVINGS			
Fuel Savings	2,612	therms	NJ Protocols Calculation
Fuel Cost Savings	$ 2,040		

Savings calculation formulas are taken from NJ Protocols document for Occupancy Controlled Thermostats

Algorithms

$$Gas\ Savings\ (Therms) = \frac{OF \times ((CAPY_{Bi} \times EFF_Q) - (CAPY_{Qi} \times EFF_B \times ICF)) \times HDD_{mod} \times 24}{\Delta T \times HC_{fuel} \times EFF_B \times ICF \times EFF_Q}$$

Definition of Variables

OF = Oversize factor of standard boiler or furnace (OF=0.8)

$CAPY_{Bi}$ = Total input capacity of the baseline furnace, boiler or heater in Btu/hour

$CAPY_{Qi}$ = Total input capacity of the qualifying furnace, boiler or heater in Btu/hour

HDD_{mod} = HDD by zone and building type

24 = Hours/Day

ΔT = design temperature difference

HC_{fuel} = Conversion from Btu to therms of gas or gallons of oil or propane (100,000 btu/therm; 138,700 btu/gal of #2 oil; 92,000 btu/gal of propane)

EFF_Q = Efficiency of qualifying heater(s) (AFUE %)

EFF_B = Efficiency of baseline heaters (AFUE %)

ICF = Infrared Compensation Factor (ICF = 0.8 for IR Heaters, 1.0 for furnaces/boilers)[2]

Furnaces and Boilers

Component	Type	Value	Source
$AFUE_q$	Variable		Application
$AFUE_b$	Fixed	Furnaces: 78% Boilers: 80% Infrared: 78%	EPACT Standard for furnaces and boilers
$CAPY_{in}$	Variable		Application
ΔT	Variable	See Table Below	1
HDD_{mod}	Fixed	See Table Below	1

Sources:

1. KEMA, *Smartstart Program Protocol Review*. 2009.
2. http://www.spaceray.com/1_space-ray_faqs.php

Adjusted Heating Degree Days by Building Type

Building Type	Heating Energy Density (kBtu/sf)	Degree Day Adjustment Factor	Atlantic City (HDD)	Newark (HDD)	Philadelphia (HDD)	Monticello (HDD)
Education	29.5	0.55	2792	2783	2655	3886
Food Sales	35.6	0.66	3369	3359	3204	4689
Food Service	39.0	0.73	3691	3680	3510	5137
Health Care	53.6	1.00	5073	5057	4824	7060
Lodging	15.0	0.28	1420	1415	1350	1976
Retail	29.3	0.55	2773	2764	2637	3859
Office	28.1	0.52	2660	2651	2529	3701
Public Assembly	33.8	0.63	3199	3189	3042	4452
Public Order/Safety	24.1	0.45	2281	2274	2169	3174
Religious Worship	29.1	0.54	2754	2745	2619	3833
Service	47.8	0.89	4524	4510	4302	6296
Warehouse/Storage	20.2	0.38	1912	1906	1818	2661

Heating Degree Days and Outdoor Design Temperature by Zone

Weather Station	HDD	Outdoor Design Temperature (F)
Atlantic City	5073	13
Newark	5057	14
Philadelphia, PA	4824	15
Monticello, NY	7060	8

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-1 Add a Condensing Gas Boiler - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
2,000 MBH NG Condensing Boiler	1	EA	$ 20,000	$ 10,000		$ 20,540	$ 12,460	$ -	$ 33,000	Vendor Estimate
Flue Installation	1	LS	$2,500.0	$2,500.00		$ 2,568	$ 3,115	$ -	$ 5,683	Estimated
Controls	1	EA	$ 500.0	$1,500.00		$ 514	$ 1,869	$ -	$ 2,383	Estimated
Miscellaneous Electrical	1	LS	$ 1,000	$ 2,500		$ 1,027	$ 3,115	$ -	$ 4,142	Estimated
Miscellaneous HW Piping	1	LS	$ 2,000	$ 1,000		$ 2,054	$ 1,246	$ -	$ 3,300	Estimated
Pumps	1	EA	$ 3,500	$ 1,500		$ 3,595	$ 1,869	$ -	$ 5,464	Estimated
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$ 53,971	Subtotal
$ 13,493	25% Contingency
$ 67,463	**Total**

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-2 Install VFDs on the Chilled Water Pump Motors

Variable Inputs

Supply Electric Rate	$0.145
Demand Rate	$3.530
Cooling System "On" Point	65
VFD Efficiency	98.5%

Electric Savings		**21,208**
Demand Savings		**0.0**
Cost Savings	**$**	**3,075**

ECM-3 Central DDC System Retro-commissioning and VAV System Recalibrating

This measure looks at installing Varible Frequency Drives on the chilled water pump motors and the savings are based on the BIN data and estimated running hours/load %. The pumps are running at lead and lag. A hydraulic calculation should be carried out to size the pump and motor properly if this measure is approved by County of Essex.

PUMP SCHEDULE

Pump ID	Qty	HP	Total HP	Existing Motor Motor Eff.	New Motor Motor Eff.	Exist. Motor kW Note 1	New Motor kW Note 2
CHWP	1	20.0	20.0	91.0%	91.0%	13.12	13.12
CHWP	0	20.0	0.0	91.0%	91.0%	0.00	0.00
					Total:	13.12	13.12

SAVINGS ANALYSIS

OAT - DB Avg Temp F	Annual Hours in Bin	Cooling Hours Bin	Pump Load %	Existing Pump kWh	Proposed Pump kW	Speed efficiency %	Proposed Pump kWh	Proposed Savings kWh
(A) See Note 3	(B) See Note 3	(C) =IF(A>TP,0,C)	(D) =0.5+0.5* (55-A)/(55-12)) See Note 4	(E) =D*AA	(F) =BB*E^3.0/CC See Note 5	(G)	(H) =C*F/G	(I) =E-H
102.5	0	0	0%	0	0.0	0.0%	0	0
97.5	0	0	0%	0	0.0	0.0%	0	0
92.5	3	3	93%	39	10.7	100.0%	32	7
87.5	34	34	79%	446	6.5	99.3%	221	225
82.5	131	131	64%	1,718	3.5	93.0%	498	1,220
77.5	500	500	50%	6,558	1.7	81.5%	1,021	5,537
72.5	620	620	50%	8,132	1.7	81.5%	1,266	6,866
67.5	664	664	50%	8,709	1.7	81.5%	1,356	7,353
62.5	854	0	0%	0	0.0	0.0%	0	0
57.5	927	0	0%	0	0.0	0.0%	0	0
52.5	600	0	0%	0	0.0	0.0%	0	0
47.5	610	0	0%	0	0.0	0.0%	0	0
42.5	611	0	0%	0	0.0	0.0%	0	0
37.5	656	0	0%	0	0.0	0.0%	0	0
32.5	1,023	0	0%	0	0.0	0.0%	0	0
27.5	734	0	0%	0	0.0	0.0%	0	0
22.5	334	0	0%	0	0.0	0.0%	0	0
17.5	252	0	0%	0	0.0	0.0%	0	0
12.5	125	0	0%	0	0.0	0.0%	0	0
7.5	47	0	0%	0	0.0	0.0%	0	0
2.5	22	0	0%	0	0.0	0.0%	0	0
-2.5	13	0	0%	0	0.0	0.0%	0	0
-7.5	0	0	0%	0	0.0	0.0%	0	0
	8,760	**1,952**		**25,603**			**4,396**	**21,208**

Notes:

1) Existing motor power was determined using motor nameplate data. Formula: Motor HP x 0.746 x 0.8 / Exist. Motor Eff.
2) New motor power is the same as existing motor power adjusted for the new efficiency, if a new motor is proposed.
3) Weather data from NOAA for Newark, NJ
4) The pump load is estimated at 100% at 12 deg. OAT and 50% at 55 deg. OAT and varies linearly in between.
5) The required VFD motor draw is based on a 3 power relationship to load.

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-2 Install VFDs on the Chilled Water Pump Motors - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.00

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
VFD	2	ea	$ 3,465	$ 772		$ 7,117	$ 1,924	$ -	$ 9,041	RS Means 2012
Electrical - misc.	1	ls	$ 1,000	$ 2,000		$ 1,027	$ 2,492	$ -	$ 3,519	RS Means 2012
2-Way Valves	5	ea	$ 500	$ 500		$ 2,568	$ 3,115	$ -	$ 5,683	RS Means 2012
Pressure Sensor installation	1	ea	$ 200	$ 500		$ 205	$ 623	$ -	$ 828	RS Means 2012
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$ 19,071	Subtotal
$ 4,768	25% Contingency
$ 23,839	**Total**

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-3 Central DDC System Retro-commissioning and VAV System Recalibrating

Description: This ECM evaluates the energy savings associated with retro-commissioing the existing DDC system and recalibrating the VAV system to optimize the system.

Building Information:

105,000	Sq Footage	$0.15	$/kWh Blended
Y	Cooling	$0.78	$/Therm
Y	Heating		

FULL DDC - TEMPERATURE SETBACK SAVINGS CALCULATION

EXISTING CONDITIONS		
Heating		
Heating Season Facility Temp	72	F
Weekly Occupied Hours	168	hrs
Heating Season Setback Temp	72	F
Heating Season % Savings per Degree Setback	1%	
Annual Boiler Capacity	2,360	Mbtu/yr
Connected Heating Load Capacity	2,360,000	Btu/hr
Equivalent Full Load Heating Hours	100	hrs
Heating System Efficiency	80%	
Cooling		
Cooling Season Facility Temp	72	F
Weekly Occupied Hours	168	hrs
Cooling Season Setback Temp	72	F
Cooling Season % Savings per Degree Setback	0%	
Connected Cooling Load Capacity	200	Tons
Equivalent Full Load Cooling Hours	100	hrs
Cooling Equipment EER	10.0	
SAVINGS		
Natural Gas Savings	0	Therms
Cooling Electricity Savings	0	kWh

Nighttime Setback

EXISTING CONDITIONS		
Heating		
Heating Season Facility Temp	68	F
Weekly Occupied Hours	168	hrs
Heating Season Setback Temp	68	F
Heating Season % Savings per Degree Setback	1%	
Annual Boiler Capacity	2,360	Mbtu/yr
Connected Heating Load Capacity	2,360,000	Btu/hr
Equivalent Full Load Heating Hours	50	hrs
Heating Equipment Efficiency	80%	
Cooling		
Cooling Season Facility Temp	72	F
Weekly Occupied Hours	168	hrs
Cooling Season Setback Temp	80	F
Cooling Season % Savings per Degree Setback	1%	
Connected Cooling Load Capacity	200	Tons
Equivalent Full Load Cooling Hours	50	hrs
Cooling Equipment EER	10.0	
SAVINGS		
Natural Gas Savings	0	Therms[3]
Cooling Electricity Savings	17,823	kWh

FULL DDC - ADDITIONAL CONTROLS SAVINGS CALCULATION

EXISTING CONDITIONS		
Existing Facility Total Electric usage	2,077,140	kWh
Existing Facility Total Gas usage	27,376	Therms
Existing Facility Cooling Electric usage	700,000.0	kWh[1]
Existing Facility Heating Natural Gas usage	18,962	Therms[2]
PROPOSED CONDITIONS		
Proposed Facility Cooling Electric Savings	70,000	kWh
Proposed Facility Natural Gas Savings	1,896	Therms
SAVINGS		
Electric Savings	70,000	**kWh**
Natural Gas Savings	1,896	**Therms**

Assumptions

1	34%	of facility total electricity dedicated to Cooling; based on utility information
2	69%	of facility total natural gas dedicated to Heating; based on utility information
3	10%	The building already has a DDC control system but not calibrated or comminssioned. Therefore, it is estimated there would be 1% savings after upgrading the system

COMBINED SAVINGS		
Natural Gas Savings	1,896	Therms
Cooling Electricity Savings	87,823	kWh
Total Cost Savings	$ 14,830	
Estimated Total Project Cost	$ 45,791	
Simple Payback	3.1	Yrs

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.00

ECM-3 Central DDC System Retro-commissioning and VAV System Recalibrating - Cost

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
Complete DDC system retro-commissioning	105000	SF		$0.28		$ -	$ 36,632	$ -	$ 36,632	Estimated
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$	36,632	Subtotal
$	9,158	25% Contingency
$	**45,791**	**Total**

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-4 Replace the DHW Boiler with Condensing DHW Boiler

Description: This ECM evaluates the energy savings associated with replacing a gas fired boiler with an similar capacity water boiler.

Item	Value	Units	Formula/Comments
Avg. Monthly Utility Demand by Water Heater	701	Therms/month	Calculated from utility bill
Total Annual Utility Demand by Water Heater	841,400	MBTU/yr	1therm = 100 MBTU
Existing DHW Heater Efficiency	80%		Per manufacturer nameplate
Total Annual Hot Water Demand (w/ standby losses)	673,120	MBTU/yr	
Existing Tank Size	800	Gallons	Estimated from Existing Tanks
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	Per building personnel
Room Temperature	72	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	8.1	MBH	
Annual Standby Hot Water Load	70,518	MBTU/yr	
New Tank Size	800	Gallons	
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	
Room Temperature	72	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	8.1	MBH	
Annual Standby Hot Water Load	70,518	MBTU/yr	
Total Annual Hot Water Demand	673,120	MBTU/yr	
Proposed Avg. Hot water heater efficiency	96%		
Proposed Fuel Use	7,012	Therns	Standby Losses and inefficient DHW heater eliminated
Utility Cost	$0.78	$/Therm	
Existing Operating Cost of DHW	$6,571	$/yr	
Proposed Operating Cost of DHW	$5,476	$/yr	

Savings Summary:

Utility	Energy Savings	Cost Savings
Therms/yr	1,402	$1,095

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-4 Replace the DHW Boiler with Condensing DHW Boiler - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	RS Means 2012
High Efficiency Gas-Fired 1500MBH condensing boiler	1	EA	$ 27,500	$ 5,300		$ 28,243	$ 6,604	$ -	$ 34,846	Estimated
Venting	1	EA	$ 500	$ 500		$ 514	$ 623	$ -	$ 1,137	RS Means 2012
Piping	1	EA	$ 500	$ 500		$ 514	$ 623	$ -	$ 1,137	RS Means 2012
Electrical	1	EA	$ 500	$ 500		$ 514	$ 623	$ -	$ 1,137	Estimated

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

$ 38,256	Subtotal
$ 9,564	25% Contingency
$ 47,820	**Total**

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-5 Replace Pool Water Heater with Condensing Water Heater

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

Item	Value	Units	Formula/Comments
Avg. Monthly Utility Demand by Water Heater	70	Therms/month	Calculated from utility bill
Total Annual Utility Demand by Water Heater	84,000	MBTU/yr	1therm = 100 MBTU
Existing DHW Heater Efficiency	80%		Per manufacturer nameplate
Total Annual Hot Water Demand (w/ standby losses)	67,200	MBTU/yr	
Existing Tank Size	0	Gallons	Per manufacturer nameplate
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	Per building personnel
Room Temperature	72	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	0.1	MBH	
Annual Standby Hot Water Load	438	MBTU/yr	
New Tank Size	0	Gallons	Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	
Room Temperature	72	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	0.1	MBH	
Annual Standby Hot Water Load	438	MBTU/yr	
Total Annual Hot Water Demand	67,200	MBTU/yr	
Proposed Avg. Hot water heater efficiency	96%		Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Proposed Fuel Use	700	Therns	Standby Losses and inefficient DHW heater eliminated
Utility Cost	$0.78	$/Therm	
Existing Operating Cost of DHW	$656	$/yr	
Proposed Operating Cost of DHW	$547	$/yr	

Savings Summary:

Utility	Energy Savings	Cost Savings
Therms/yr	140	$109

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-5 Replace Pool Water Heater with Condensing Water Heater - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
Heater Removal	1	LS		$ 50		$ -	$ 62	$ -	$ 62	RS Means 2012
High Efficiency Gas-Fired DHW Heater	1	EA	$ 2,000	$ 500		$ 2,054	$ 623	$ -	$ 2,677	Estimated
Miscellaneous Electrical	1	LS	$ 100			$ 103	$ -	$ -	$ 103	RS Means 2012
Venting Kit	1	EA	$ 100	$ 100		$ 103	$ 125	$ -	$ 227	RS Means 2012
Miscellaneous Piping and Valves	1	LS	$ 100	$ 100		$ 103	$ 125	$ -	$ 227	Estimated

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

$ 3,297	Subtotal
$ 824	25% Contingency
$ 4,121	**Total**

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-6 Install Walk-in Cooler/Freezer Control

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

Utility Cost

$0.15 $/kWh Blended

EXISTING CONDITIONS			
Walk-In Freezer(s)			
Existing Freezer Controls?	N		
Quantity of Walk-In Freezers	1		
Nameplate Amps of Freezer Evaporator Fan	3.3		AmpsEF
Nameplate Volts of Freezer Evaporator Fan	208		VoltsEF
Phase of Evaporator Fan	1		PhaseEF
Power Factor of Evaporator Fan	0.55		PFEF
Operating Hours	8,760	hrs	
Load Reduction	65%		LR
Electricity Savings (Evaporator Fan)	2,150	kWh	kWhEF
Electricity Savings (Evaporator Fan Reduced Heat)	963	kWh	kWhRH
Total Walk-In Freezer(s) Electricity Savings	3,113	kWh	
Walk-In Cooler(s)			
Existing Cooler Controls?	N		
Quantity of Walk-In Coolers	2		
Nameplate Amps of Cooler Evaporator Fan	3.3		
Nameplate Volts of Cooler Evaporator Fan	208		
Phase of Evaporator Fan	1		
Power Factor of Evaporator Fan	0.55		
Operating Hours	8,760	hrs	
Load Reduction	65%		
Electricity Savings (Evaporator Fan)	4,299	kWh	
Electricity Savings (Evaporator Fan Reduced Heat)	1,926	kWh	
Total Walk-In Cooler(s) Electricity Savings	6,225	kWh	
SAVINGS			
Total Electricity Savings	**9,338**	**kWh**	
Total Cost Savings	**$ 1,419**		
Estimated Cost	$ 20,625		
Simple Payback	14.5	**years**	

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

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-6 Install Walk-in Cooler/Freezer Control - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

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

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

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

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

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

Item	Value	Units	Formula/Comments
Baseline Fuel Cost	$ 0.78	/ Therm	
Electricity Cost	$ 0.15	$/kWh	
Demand Cost	$ 3.53	$/kWh	
FORMULA CONSTANTS			
CF	0.3		Coincidence Factor (NJ Protocols)
EFLH	100		Equivalent Full Load Hours (NJ Protocols)
PROPOSED EQUIPMENT			
Input Rating	100,000	btu/hr	
Efficiency	80%		
SAVINGS			
Electricity Savings	2,345	kWh	
Demand Savings	8	kW	
Additional Fuel Usag	(100)	Therms	
Fuel Cost Savings	$ 601		

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

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

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
Natural Gas Fired Booster Heater	1	EA	$ 6,000	$ 1,000		$ 6,162	$ 1,246	$ -	$ 7,408	Estimated
Venting, Piping, Ect.	1	LS	$ 2,500	$ 1,000		$ 2,568	$ 1,246	$ -	$ 3,814	RS Means 2012
Electrical	1	LS	$ 250	$ 500		$ 257	$ 623	$ -	$ 880	RS Means 2012
						$ -	$ -	$ -	$ -	

$ 12,101	Subtotal
$ 3,025	25% Contingency
$ 15,100	**Total**

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-8: Replace urinals and flush valves with low flow

Description: This ECM evaluates the water savings associated with replacing/ upgrading urinals with 0.125 GPF urinals and or flush valves.

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$7.50	$ / kGal
Urinals in Building to be replaced	90	
Average Flushes / Urinal (per Day)	3	
Average Gallons / Flush	1.0	Gal

PROPOSED CONDITIONS		
Proposed Urinals to be Replaced	90	
Proposed Gallons / Flush	0.125	Gal
Proposed Material Cost of new urinal & valve	$1,200	RS Means 2012
Proposed Installation Cost of new urinal & valve	$1,000	RS Means 2012
Total cost of new urinals & valves		

SAVINGS		
Current Urinal Water Use	98.55	kGal / year
Proposed Urinal Water Use	12.32	kGal / year
Water Savings	86.23	kGal / year
Cost Savings	$647	/ year

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-8 : Replace toilets and flush valves with low flow

Description: This ECM evaluates the water savings associated with replacing/ upgrading toilets to 1.28 GPF fixtures and/or flush valves.

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$7.50	$ / kGal
Toilets in Building	270	
Average Flushes / Toilet (per Day)	3	
Average Gallons / Flush	1.6	Gal

PROPOSED CONDITIONS		
Proposed Toilets to be Replaced	270	
Proposed Gallons / Flush	1.28	Gal

SAVINGS		
Current Toilet Water Use	473.04	kGal / year
Proposed Toilet Water Use	378.43	kGal / year
Water Savings	94.61	kGal / year
Cost Savings	$710	/ year

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-8: Replace faucets with low flow

Description; This ECM evaluates the water savings resulting from replacing/ upgrading faucets to 0.5 gallon per minute flow

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$7.50	$ / kGal
Faucets in Building	266	
Average Uses / Faucet (per day)	1	# Uses
Average Time of Use	10.0	seconds
Average Flowrate	1.5	gpm

PROPOSED CONDITIONS		
Proposed Faucets to be Replaced	266	
Proposed Flowrate	0.5	gpm

HEATING SAVINGS		
Fuel Cost	$ 0.78	/therm
Number of Faucets	266	
Hours per Day of Usage	0.1	hrs
Days per Year of Facility Usage	365	days
Average Flowrate	1.5	gpm
Proposed Flowrate	0.5	gpm
Heat Content of Water	8.33	Btu/gal/F
Temperature Difference (Intake and Output)	35	F
Water Heating Equipment Efficiency	80%	
Conversion Factor	100,000	Btu/Therm
SAVINGS		
Current Faucet Water Use	24.27	kGal / year
Proposed Faucet Water Use	8.09	kGal / year
Water Savings	16.18	kGal / year
Heating Savings	2,123	Therms
Cost Savings	$1,779	/ year

Savings calculation formulas are taken from NJ Protocols document for Faucet

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

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

ECM-8: Replace shower heads with low flow

Description; This ECM evaluates the water savings resulting from

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$7.50	$ / kGal
Faucets in Building	48	
Average Uses / Faucet (per day)	0.5	# Uses
Average Time of Use	300.0	seconds
Average Flowrate	1.5	gpm

PROPOSED CONDITIONS		
Proposed Faucets to be Replaced	48	
Proposed Flowrate	0.5	gpm

HEATING SAVINGS		
Fuel Cost	$ 0.78	/therm
Number of Faucets	48	
Hours per Day of Usage	0.1	hrs
Days per Year of Facility Usage	365	days
Average Flowrate	1.5	gpm
Proposed Flowrate	0.5	gpm
Heat Content of Water	8.33	Btu/gal/F
Temperature Difference (Intake and	35	F
Water Heating Equipment Efficiency	80%	
Conversion Factor	100,000	Btu/Therm
SAVINGS		
Current Faucet Water Use	65.70	kGal / year
Proposed Faucet Water Use	21.90	kGal / year
Water Savings	43.80	kGal / year
Heating Savings	383	Therms
Cost Savings	$628	/ year

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

Replace Plumbing Fixtures with Low-Flow Equivalents - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									$ -	
Low-Flow Urinal	90	EA	$ 500	$ 500	$ -	$ 46,215	$ 56,070	$ -	$ 102,285	Vendor Estimate
Low-Flow Toilet	270	EA	$ 800	$ 500	$ -	$ 221,832	$ 168,210	$ -	$ 390,042	Vendor Estimate
Low-Flow faucet	266	EA	$ 50	$ 50	$ -	$ 13,659	$ 16,572	$ -	$ 30,231	Vendor Estimate
Low-Flow shower	48	EA	$ 50	$ 50	$ -	$ 2,465	$ 2,990	$ -	$ 5,455	Vendor Estimate
						$ -	$ -	$ -	$ -	

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

$ 528,013	Subtotal
$ 132,003	25% Contingency
$ 660,016	**Total**

Essex County - Youth House
CHA Project Number: 29142
Essex County - Youth House

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)	105,000
Is this audit funded by NJ BPU (Y/N)	Yes

Board of Public Utilites (BPU)

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

	Annual Utilities	
	kWh	Therms
Existing Cost (from utility)	$315,570	$21,393
Existing Usage (from utility)	2,077,140	27,376
Proposed Savings	388,951	5,911
Existing Total MMBtus	9,827	
Proposed Savings MMBtus	1,919	
% Energy Reduction	**19.5%**	
Proposed Annual Savings	$63,745	

	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	$0.11	$1.13
Incentive #3	$0.09	$0.90	$0.005	$0.05	$0.11	$1.25	$0.11	$1.13

	Incentives $		
	Elec	Gas	Total
Incentive #1	$0	$0	$5,250
Incentive #2	$42,785	$6,657	$49,441
Incentive #3	$42,785	$6,657	$49,441
Total All Incentives	**$85,569**	**$13,314**	**$104,133**

Total Project Cost	$474,567

		Allowable Incentive
% Incentives #1 of Utility Cost*	1.6%	$5,250
% Incentives #2 of Project Cost**	10.4%	$49,441
% Incentives #3 of Project Cost**	10.4%	$49,441
Total Eligible Incentives***	**$104,133**	
Project Cost w/ Incentives	$370,434	

Project Payback (years)	
w/o Incentives	w/ Incentives
7.4	5.8

* Maximum allowable incentive is 50% of annual utility cost if not funded by NJ BPU, and %25 if it is.

** Maximum allowable amount of Incentive #2 is 25% of total project cost.
Maximum allowable amount of Incentive #3 is 25% of total project cost.

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

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L1 Lighting Replacements

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
146LED	Lower Level Floor Gym	9	High Bay MH 400	MH400/1	458	4.1	SW	3640	15,004	9	BAYLED78W	BAYLED78W	93	0.8	SW	3,640	3,047	11,957	3.3	$ 1,872.98	$ 7,597.76	$0	4.1	4.1
35LED	Weight Room	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	3640	2,621	8	T 59 R LED	RTLED38	38	0.3	SW	3,640	1,107	1,514	0.4	$ 237.19	$ 1,890.00	$0	8.0	8.0
35LED	Staff Lounge	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	SW	4,368	498	681	0.2	$ 105.41	$ 708.75	$0	6.7	6.7
35LED	Staff Lounge Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
32LED	Storage	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	349	2	4 ft LED Tube	200732x2	30	0.1	SW	2,912	175	175	0.1	$ 27.88	$ 467.40	$0	16.8	16.8
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Classroom	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	2912	2,097	8	T 59 R LED	RTLED38	38	0.3	SW	2,912	885	1,211	0.4	$ 193.27	$ 1,890.00	$0	9.8	9.8
35LED	Classroom	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	SW	2912	3,669	14	T 59 R LED	RTLED38	38	0.5	SW	2,912	1,549	2,120	0.7	$ 338.23	$ 3,307.50	$0	9.8	9.8
35LED	Storage	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Computer Room	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	2912	2,359	9	T 59 R LED	RTLED38	38	0.3	SW	2,912	996	1,363	0.5	$ 217.43	$ 2,126.25	$0	9.8	9.8
35LED	Corridor	21	T 32 R F 3 (ELE)	F43ILL/2	90	1.9	SW	8736	16,511	21	T 59 R LED	RTLED38	38	0.8	SW	8,736	6,971	9,540	1.1	$ 1,429.52	$ 4,961.25	$0	3.5	3.5
35LED	Media Center	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	2912	1,835	7	T 59 R LED	RTLED38	38	0.3	SW	2,912	775	1,060	0.4	$ 169.11	$ 1,653.75	$0	9.8	9.8
5LED	Media Center	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	349	2	2T XX R LED	2RTLED	25	0.1	SW	2,912	146	204	0.1	$ 32.52	$ 405.00	$0	12.5	12.5
35LED	Classroom	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	2912	1,835	7	T 59 R LED	RTLED38	38	0.3	SW	2,912	775	1,060	0.4	$ 169.11	$ 1,653.75	$0	9.8	9.8
5LED	Classroom	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	349	2	2T XX R LED	2RTLED	25	0.1	SW	2,912	146	204	0.1	$ 32.52	$ 405.00	$0	12.5	12.5
35LED	Testing	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	2912	1,835	7	T 59 R LED	RTLED38	38	0.3	SW	2,912	775	1,060	0.4	$ 169.11	$ 1,653.75	$0	9.8	9.8
5LED	Testing	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	349	2	2T XX R LED	2RTLED	25	0.1	SW	2,912	146	204	0.1	$ 32.52	$ 405.00	$0	12.5	12.5
35LED	Wood Shop	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.3	SW	2912	6,814	26	T 59 R LED	RTLED38	38	1.0	SW	2,912	2,877	3,937	1.4	$ 628.14	$ 6,142.50	$0	9.8	9.8
35LED	Corridor	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	8736	7,076	9	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,988	4,088	0.5	$ 612.65	$ 2,126.25	$0	3.5	3.5
35LED	Office	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	SW	4,368	498	681	0.2	$ 105.41	$ 708.75	$0	6.7	6.7
35LED	Game	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	2912	3,145	12	T 59 R LED	RTLED38	38	0.5	SW	2,912	1,328	1,817	0.6	$ 289.91	$ 2,835.00	$0	9.8	9.8
35LED	Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	2912	524	2	T 59 R LED	RTLED38	38	0.1	SW	2,912	221	303	0.1	$ 48.32	$ 472.50	$0	9.8	9.8
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Lobby	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	8736	7,076	9	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,988	4,088	0.5	$ 612.65	$ 2,126.25	$0	3.5	3.5
32LED	Work Shop	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	SW	2912	1,398	8	4 ft LED Tube	200732x2	30	0.2	SW	2,912	699	699	0.2	$ 111.50	$ 1,869.60	$0	16.8	16.8
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Corridor	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	8736	7,076	9	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,988	4,088	0.5	$ 612.65	$ 2,126.25	$0	3.5	3.5
35LED	Laundry	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	2912	3,145	12	T 59 R LED	RTLED38	38	0.5	SW	2,912	1,328	1,817	0.6	$ 289.91	$ 2,835.00	$0	9.8	9.8
32LED	Maintenance Storage	7	1T 32 R F 2 (ELE)	F42LL	60	0.4	SW	2912	1,223	7	4 ft LED Tube	200732x2	30	0.2	SW	2,912	612	612	0.2	$ 97.57	$ 1,635.90	$0	16.8	16.8
20LED	Mechanical Room	20	S 28 P F 1 (ELE)	F41ILL	31	0.6	SW	2912	1,805	20	4 ft LED Tube	200732x1	15	0.3	SW	2,912	874	932	0.3	$ 148.67	$ 2,904.00	$0	19.5	19.5
20LED	Electric Room	10	S 28 P F 1 (ELE)	F41ILL	31	0.3	SW	2912	903	10	4 ft LED Tube	200732x1	15	0.2	SW	2,912	437	466	0.2	$ 74.34	$ 1,452.00	$0	19.5	19.5
35LED	Household Storage	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	2912	1,310	5	T 59 R LED	RTLED38	38	0.2	SW	2,912	553	757	0.3	$ 120.80	$ 1,181.25	$0	9.8	9.8
35LED	Office B12	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	$ 140.55	$ 945.00	$0	6.7	6.7
32LED	Janitor B14	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
35LED	Kitchen	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	2912	3,931	15	T 59 R LED	RTLED38	38	0.6	SW	2,912	1,660	2,271	0.8	$ 362.39	$ 3,543.75	$0	9.8	9.8
32LED	Kitchen	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	349	2	4 ft LED Tube	200732x2	30	0.1	SW	2,912	175	175	0.1	$ 27.88	$ 467.40	$0	16.8	16.8
35LED	Kitchen Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	2912	786	3	T 59 R LED	RTLED38	38	0.1	SW	2,912	332	454	0.2	$ 72.48	$ 708.75	$0	9.8	9.8
35LED	Dining 1	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	4368	4,717	12	T 59 R LED	RTLED38	38	0.5	SW	4,368	1,992	2,726	0.6	$ 421.65	$ 2,835.00	$0	6.7	6.7
35LED	Dining 2	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	4368	4,717	12	T 59 R LED	RTLED38	38	0.5	SW	4,368	1,992	2,726	0.6	$ 421.65	$ 2,835.00	$0	6.7	6.7
35LED	1st Floor Office G89	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	SW	4,368	498	681	0.2	$ 105.41	$ 708.75	$0	6.7	6.7
35LED	Office G99	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Office G100	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Office G101	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	SW	4,368	498	681	0.2	$ 105.41	$ 708.75	$0	6.7	6.7
35LED	Office G84	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	SW	4,368	498	681	0.2	$ 105.41	$ 708.75	$0	6.7	6.7
35LED	Office G85	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Office G86	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Office G87	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Office G88	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Corridor	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$0	3.5	3.5
35LED	Reception	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	8736	4,717	6	T 59 R LED	RTLED38	38	0.2	SW	8,736	1,992	2,726	0.3	$ 408.43	$ 1,417.50	$0	3.5	3.5
35LED	Corridor	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	8736	6,290	8	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,656	3,634	0.4	$ 544.58	$ 1,890.00	$0	3.5	3.5
35LED	G102	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	G103	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	G104	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	G105	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	G106	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	G93	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	G94	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	G95	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	SW	4,368	332	454	0.1	$ 70.27	$ 472.50	$0	6.7	6.7
35LED	Multipurpose Room	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.2	SW	2912	3,407	13	T 59 R LED	RTLED38	38	0.5	SW	2,912	1,439	1,969	0.7	$ 314.07	$ 3,071.25	$0	9.8	9.8
5LED	Multipurpose Room	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	175	1	2T XX R LED	2RTLED	25	0.0	SW	2,912	73	102	0.0	$ 16.26	$ 202.50	$0	12.5	12.5
35LED	Meeting Room	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	4368	2,359	6	T 59 R LED	RTLED38	38	0.2	SW	4,368	996	1,363	0.3	$ 210.82	$ 1,417.50	$0	6.7	6.7
35LED	Visitor Waiting Room	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	$ 140.55	$ 945.00	$0	6.7	6.7
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
35LED	Visitor Sally Port	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	4368	1,966	5	T 59 R LED	RTLED38	38	0.2	SW	4,368	830	1,136	0.3	$ 175.69	$ 1,181.25	$0	6.7	6.7
35LED	Youth Sally Port	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	$ 140.55	$ 945.00	$0	6.7	6.7
35LED	Holding G12	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	SW	4,368	498	681	0.2	$ 105.41	$ 708.75	$0	6.7	6.7
5LED	Holding G12	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	4368	262	1	2T XX R LED	2RTLED	25	0.0	SW	4,368	109	153	0.0	$ 23.65	$ 202.50	$0	8.6	8.6
35LED	Holding G14	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	Exam G14	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	Exam G15	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
5LED	Corridor	16	2T 32 R F 2 (u) (ELE)	FU2LL	60	1.0	SW	8736	8,387	16	2T XX R LED	2RTLED	25	0.4	SW	8,736	3,494	4,892	0.6	$ 733.08	$ 3,240.00	$0	4.4	4.4
35LED	Interview Room	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	Interview Room	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	2912	524	2	T 59 R LED	RTLED38	38	0.1	SW	2,912	221	303	0.1	$ 48.32	$ 472.50	$0	9.8	9.8
35LED	Cloth Storage	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	2912	1,572	6	T 59 R LED	RTLED38	38	0.2	SW	2,912	664	909	0.3	$ 144.96	$ 1,417.50	$0	9.8	9.8
64LED	Loading Area	7	175 MH	MH175/1	215	1.5	SW	4368	6,574	7	BAYLED78W	BAYLED78W	93	0.7	SW	4,368	2,844	3,730	0.9	$ 577.06	$ 5,909.37	$0	10.2	10.2
32LED	Receiving Area	10	1T 32 R F 2 (ELE)	F42LL	60	0.6	SW	2912	1,747	10	4 ft LED Tube	200732x2	30	0.3	SW	2,912	874	874	0.3	$ 139.38	$ 2,337.00	$0	16.8	16.8
35LED	Dentist Exam	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	$ 140.55	$ 945.00	$0	6.7	6.7
35LED	Doctor Exam	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	$ 140.55	$ 945.00	$0	6.7	6.7
35LED	Nurse Station	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	4368	3,538	9	T 59 R LED	RTLED38	38	0.3	SW	4,368	1,494	2,044	0.5	$ 316.24	$ 2,126.25	$0	6.7	6.7
35LED	Nurse	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	Medical	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	SW	4,368	166	227	0.1	$ 35.14	$ 236.25	$0	6.7	6.7
35LED	Corridor	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	8736	3,145	4	T 59 R LED	RTLED38	38	0.2	SW	8,736	1,328	1,817	0.2	$ 272.29	$ 945.00	$0	3.5	3.5
5LED	Central Lobby	13	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.8	SW	8736	6,814	13	2T XX R LED	2RTLED	25	0.3	SW	8,736	2,839	3,975	0.5	$ 595.63	$ 2,632.50	$0	4.4	4.4
5LED	Sally Port	5	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.3	SW	8736	2,621	5	2T XX R LED	2RTLED	25	0.1	SW	8,736	1,092	1,529	0.2	$ 229.09	$ 1,012.50	$0	4.4	4.4
5LED	Reception	10	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.6	SW	8736	5,242	10	2T XX R LED	2RTLED	25	0.3	SW	8,736	2,184	3,058	0.4	$ 458.18	$ 2,025.00	$0	4.4	4.4
5LED	YSC Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Conference Room	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	SW	4368	1,572	6	2T XX R LED	2RTLED	25	0.2	SW	4,368	655	917	0.2	$ 141.90	$ 1,215.00	$0	8.6	8.6
5LED	Director Office	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	SW	4368	1,572	6	2T XX R LED	2RTLED	25	0.2	SW	4,368	655	917	0.2	$ 141.90	$ 1,215.00	$0	8.6	8.6
35LED	Men's Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
5LED	Men's Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	175	1	2T XX R LED	2RTLED	25	0.0	SW	2,912	73	102	0.0	$ 16.26	$ 202.50	$0	12.5	12.5
32LED	Men's Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	2912	524	3	4 ft LED Tube	200732x2	30	0.1	SW	2,912	262	262	0.1	$ 41.81	$ 701.10	$0	16.8	16.8
35LED	Women's Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	SW	2,912	111	151	0.1	$ 24.16	$ 236.25	$0	9.8	9.8
5LED	Women's Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	175	1	2T XX R LED	2RTLED	25	0.0	SW	2,912	73	102	0.0	$ 16.26	$ 202.50	$0	12.5	12.5
32LED	Women's Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	2912	524	3	4 ft LED Tube	200732x2	30	0.1	SW	2,912	262	262	0.1	$ 41.81	$ 701.10	$0	16.8	16.8
35LED	Staff Lounge	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	$ 140.55	$ 945.00	$0	6.7	6.7
35LED	Corridor	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	8736	4,717	6	T 59 R LED	RTLED38	38	0.2	SW	8,736	1,992	2,726	0.3	$ 408.43	$ 1,417.50	$0	3.5	3.5
5LED	Superintendent	7	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	SW	4368	1,835	7	2T XX R LED	2RTLED	25	0.2	SW	4,368	764	1,070	0.2	$ 165.55	$ 1,417.50	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	SW	4,368	437	612	0.1	$ 94.60	$ 810.00	$0	8.6	8.6
35LED	2nd Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$0	3.5	3.5
5LED	2nd Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	SW	8736	4,193	8	2T XX R LED	2RTLED	25	0.2	SW	8,736	1,747	2,446	0.3	$ 366.54	$ 1,620.00	$0	4.4	4.4
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L1 Lighting Replacements

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	3rd Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$0	3.5	3.5
5LED	3rd Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	SW	8736	4,193	8	2T XX R LED	2RTLED	25	0.2	SW	8,736	1,747	2,446	0.3	$ 366.54	$ 1,620.00	$0	4.4	4.4
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L1 Lighting Replacements

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
35LED	4th Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	SW	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$0	3.5	3.5
5LED	4th Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	SW	8736	4,193	8	2T XX R LED	2RTLED	25	0.2	SW	8,736	1,747	2,446	0.3	$ 366.54	$ 1,620.00	$0	4.4	4.4
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
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35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
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35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	SW	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$0	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	SW	8,736	437	612	0.1	$ 91.64	$ 405.00	$0	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	SW	2,912	87	87	0.0	$ 13.94	$ 233.70	$0	16.8	16.8
143LED	Outdoor Lighting	12	HPS 100 POLE	HPS100/1	138	1.7	SW	4368	7,233	12	ALED52	ALED52	60	0.7	SW	4,368	3,145	4,088	0.9	$ 632.47	$ 9,266.40	$2,100	14.7	11.3
							SW								SW									
	Total	1,039				84.3			459,627	1,039			11,059	35.9			194,081	265,546	48.4	$40,555	$252,830	$2,100		
																	Demand Savings			48.4	$2,051			

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
146LED	Lower Level Floor Gym	9	High Bay MH 400	MH400/1	458	4.1	4.1	NONE	3640	15,004.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Weight Room	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	0.7	NONE	3640	2,620.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Staff Lounge	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	NONE	4368	1,179.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Staff Lounge Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	2912	262.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Storage	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	C-OCC	2329.6	279.6	69.9	0.0	$10.13	$270.00	$35.00	26.6	23.2
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Classroom	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	0.7	NONE	2912	2,096.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Classroom	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	1.3	NONE	2912	3,669.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Storage	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	2329.6	209.7	52.4	0.0	$7.60	$270.00	$35.00	35.5	30.9
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	C-OCC	2329.6	139.8	34.9	0.0	$5.07	$270.00	$35.00	53.3	46.4
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	C-OCC	2329.6	139.8	34.9	0.0	$5.07	$270.00	$35.00	53.3	46.4
35LED	Computer Room	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	2912	2,358.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Corridor	21	T 32 R F 3 (ELE)	F43ILL/2	90	1.9	1.9	NONE	8736	16,511.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Media Center	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	2912	1,834.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Media Center	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	2912	349.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Classroom	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	2912	1,834.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Classroom	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	2912	349.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Testing	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	2912	1,834.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Testing	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	2912	349.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wood Shop	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.3	2.3	NONE	2912	6,814.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Corridor	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	8736	7,076.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Office	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3494.4	943.5	235.9	0.0	$34.20	$270.00	$35.00	7.9	6.9
35LED	Game	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	2912	3,145.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	2329.6	419.3	104.8	0.0	$15.20	$270.00	$35.00	17.8	15.5
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Lobby	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	8736	7,076.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Work Shop	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	0.5	NONE	2912	1,397.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Corridor	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	NONE	8736	7,076.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Laundry	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	2912	3,145.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Maintenance Storage	7	1T 32 R F 2 (ELE)	F42LL	60	0.4	0.4	C-OCC	2329.6	978.4	244.6	0.0	$35.47	$270.00	$35.00	7.6	6.6
20LED	Mechanical Room	20	S 28 P F 1 (ELE)	F41ILL	31	0.6	0.6	NONE	2912	1,805.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
20LED	Electric Room	10	S 28 P F 1 (ELE)	F41ILL	31	0.3	0.3	NONE	2912	902.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Household Storage	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	C-OCC	2329.6	1,048.3	262.1	0.0	$38.00	$270.00	$35.00	7.1	6.2
35LED	Office B12	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
32LED	Janitor B14	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	C-OCC	2329.6	139.8	34.9	0.0	$5.07	$270.00	$35.00	53.3	46.4
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	2912	262.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Kitchen	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	2912	3,931.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Kitchen	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	349.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Kitchen Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	2329.6	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Dining 1	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	4368	4,717.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Dining 2	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	1.1	NONE	4368	4,717.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	1st Floor Office G89	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3494.4	943.5	235.9	0.0	$34.20	$270.00	$35.00	7.9	6.9
35LED	Office G99	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Office G100	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Office G101	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3494.4	943.5	235.9	0.0	$34.20	$270.00	$35.00	7.9	6.9
35LED	Office G84	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3494.4	943.5	235.9	0.0	$34.20	$270.00	$35.00	7.9	6.9
35LED	Office G85	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Office G86	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Office G87	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Office G88	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Corridor	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	8736	5,503.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Reception	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	8736	4,717.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Corridor	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	0.7	NONE	8736	6,289.9	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	G102	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	G103	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	G104	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	G105	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	G106	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	G93	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	G94	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	G95	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	3494.4	629.0	157.2	0.0	$22.80	$270.00	$35.00	11.8	10.3
35LED	Multipurpose Room	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.2	1.2	NONE	2912	3,407.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Multipurpose Room	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Meeting Room	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	C-OCC	3494.4	1,887.0	471.7	0.0	$68.40	$270.00	$35.00	3.9	3.4
35LED	Visitor Waiting Room	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	2912	262.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	2912	262.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Visitor Sally Port	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	C-OCC	3494.4	1,572.5	393.1	0.0	$57.00	$270.00	$35.00	4.7	4.1
35LED	Youth Sally Port	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
35LED	Holding G12	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	0.3	C-OCC	3494.4	943.5	235.9	0.0	$34.20	$270.00	$35.00	7.9	6.9
5LED	Holding G12	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	C-OCC	3494.4	209.7	52.4	0.0	$7.60	$270.00	$35.00	35.5	30.9
35LED	Holding G14	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	Exam G14	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	Exam G15	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
5LED	Corridor	16	2T 32 R F 2 (u) (ELE)	FU2LL	60	1.0	1.0	NONE	8736	8,386.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Interview Room	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	Interview Room	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	0.2	C-OCC	2329.6	419.3	104.8	0.0	$15.20	$270.00	$35.00	17.8	15.5
35LED	Cloth Storage	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	C-OCC	2329.6	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
64LED	Loading Area	7	175 MH	MH175/1	215	1.5	1.5	NONE	4368	6,573.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Receiving Area	10	1T 32 R F 2 (ELE)	F42LL	60	0.6	0.6	C-OCC	2329.6	1,397.8	349.4	0.0	$50.67	$270.00	$35.00	5.3	4.6
35LED	Dentist Exam	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
35LED	Doctor Exam	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
35LED	Nurse Station	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	0.8	C-OCC	3494.4	2,830.5	707.6	0.0	$102.60	$270.00	$35.00	2.6	2.3
35LED	Nurse	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	Medical	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	C-OCC	3494.4	314.5	78.6	0.0	$11.40	$270.00	$35.00	23.7	20.6
35LED	Corridor	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	8736	3,145.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Central Lobby	13	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.8	0.8	NONE	8736	6,814.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Sally Port	5	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.3	0.3	NONE	8736	2,620.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Reception	10	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.6	0.6	NONE	8736	5,241.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
5LED	YSC Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Conference Room	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
5LED	Director Office	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	0.4	C-OCC	3494.4	1,258.0	314.5	0.0	$45.60	$270.00	$35.00	5.9	5.2
35LED	Men's Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	2912	262.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Men's Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Men's Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	NONE	2912	524.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Women's Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	0.1	NONE	2912	262.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Women's Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Women's Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.2	0.2	NONE	2912	524.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Staff Lounge	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	0.4	NONE	4368	1,572.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Corridor	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	0.5	NONE	8736	4,717.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Superintendent	7	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	0.4	C-OCC	3494.4	1,467.6	366.9	0.0	$53.20	$270.00	$35.00	5.1	4.4
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	0.2	C-OCC	3494.4	838.7	209.7	0.0	$30.40	$270.00	$35.00	8.9	7.7
35LED	2nd Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	8736	5,503.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	2nd Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	0.5	NONE	8736	4,193.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	**No. of Fixtures**	**Standard Fixture Code**	**Fixture Code**	**Watts per Fixture**	**kW/Space**	**kW/Space**	**Retrofit Control**	**Annual Hours**	**Annual kWh**	**Annual kWh Saved**	**Annual kW Saved**	**Annual $ Saved**	**Retrofit Cost**	**NJ Smart Start Lighting Incentive**	**Simple Payback With Out Incentive**	**Simple Payback**
Field Code	**Unique description of the location - Room number/Room name: Floor number (if applicable)**	**No. of fixtures before the retrofit**	**Lighting Fixture Code**	**Code from Table of Standard Fixture Wattages**	**Value from Table of Standard Fixture Wattages**	**(Watts/Fixt) * (Fixt No.)**	**(Watts/Fixt) * (Number of Fixtures)**	**Retrofit control device**	**Estimated annual hours for the usage group**	**(kW/space) * (Annual Hours)**	**(Original Annual kWh) - (Retrofit Annual kWh)**	**(Original Annual kW) - (Retrofit Annual kW)**	**(kW Saved) * ($/kWh)**	**Cost for renovations to lighting system**		**Length of time for renovations cost to be recovered**	**Length of time for renovations cost to be recovered**
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	3rd Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	8736	5,503.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	3rd Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	0.5	NONE	8736	4,193.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	4th Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	0.6	NONE	8736	5,503.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	4th Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	0.5	NONE	8736	4,193.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L2 Install Occupancy Sensors

		EXISTING CONDITIONS					RETROFIT CONDITIONS				COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	1.4	NONE	8736	12,579.8	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	0.1	NONE	8736	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	0.1	NONE	2912	174.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
143LED	Outdoor Lighting	12	HPS 100 POLE	HPS100/1	138	1.7	1.7	NONE	4368	7,233.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
	Total	1,039				84.3	84.3			447,798.62	11,828.54	0.0	1715.1	16200.0	2100.0		
										Demand Savings			0.0	$0			

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
146LED	Lower Level Floor Gym	9	High Bay MH 400	MH400/1	458	4.1	SW	3640	15,004	9	BAYLED78W	BAYLED78W	93	0.8	NONE	3,640	3,047	11,957	3.3	$ 1,872.98	$ 7,597.76	$ -	4.1	4.1
35LED	Weight Room	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	3640	2,621	8	T 59 R LED	RTLED38	38	0.3	NONE	3,640	1,107	1,514	0.4	$ 237.19	$ 1,890.00	$ -	8.0	8.0
35LED	Staff Lounge	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	NONE	4,368	498	681	0.2	$ 105.41	$ 708.75	$ -	6.7	6.7
35LED	Staff Lounge Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	NONE	2,912	111	151	0.1	$ 24.16	$ 236.25	$ -	9.8	9.8
32LED	Storage	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	349	2	4 ft LED Tube	200732x2	30	0.1	C-OCC	2,330	140	210	0.1	$ 32.94	$ 737.40	$ 35	22.4	21.3
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Classroom	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	2912	2,097	8	T 59 R LED	RTLED38	38	0.3	NONE	2,912	885	1,211	0.4	$ 193.27	$ 1,890.00	$ -	9.8	9.8
35LED	Classroom	14	T 32 R F 3 (ELE)	F43ILL/2	90	1.3	SW	2912	3,669	14	T 59 R LED	RTLED38	38	0.5	NONE	2,912	1,549	2,120	0.7	$ 338.23	$ 3,307.50	$ -	9.8	9.8
35LED	Storage	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	C-OCC	2,330	89	174	0.1	$ 27.37	$ 506.25	$ 35	18.5	17.2
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	C-OCC	2,330	70	105	0.0	$ 16.47	$ 503.70	$ 35	30.6	28.5
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	C-OCC	2,330	70	105	0.0	$ 16.47	$ 503.70	$ 35	30.6	28.5
35LED	Computer Room	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	2912	2,359	9	T 59 R LED	RTLED38	38	0.3	NONE	2,912	996	1,363	0.5	$ 217.43	$ 2,126.25	$ -	9.8	9.8
35LED	Corridor	21	T 32 R F 3 (ELE)	F43ILL/2	90	1.9	SW	8736	16,511	21	T 59 R LED	RTLED38	38	0.8	NONE	8,736	6,971	9,540	1.1	$ 1,429.52	$ 4,961.25	$ -	3.5	3.5
35LED	Media Center	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	2912	1,835	7	T 59 R LED	RTLED38	38	0.3	NONE	2,912	775	1,060	0.4	$ 169.11	$ 1,653.75	$ -	9.8	9.8
5LED	Media Center	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	349	2	2T XX R LED	2RTLED	25	0.1	NONE	2,912	146	204	0.1	$ 32.52	$ 405.00	$ -	12.5	12.5
35LED	Classroom	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	2912	1,835	7	T 59 R LED	RTLED38	38	0.3	NONE	2,912	775	1,060	0.4	$ 169.11	$ 1,653.75	$ -	9.8	9.8
5LED	Classroom	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	349	2	2T XX R LED	2RTLED	25	0.1	NONE	2,912	146	204	0.1	$ 32.52	$ 405.00	$ -	12.5	12.5
35LED	Testing	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	2912	1,835	7	T 59 R LED	RTLED38	38	0.3	NONE	2,912	775	1,060	0.4	$ 169.11	$ 1,653.75	$ -	9.8	9.8
5LED	Testing	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	349	2	2T XX R LED	2RTLED	25	0.1	NONE	2,912	146	204	0.1	$ 32.52	$ 405.00	$ -	12.5	12.5
35LED	Wood Shop	26	T 32 R F 3 (ELE)	F43ILL/2	90	2.3	SW	2912	6,814	26	T 59 R LED	RTLED38	38	1.0	NONE	2,912	2,877	3,937	1.4	$ 628.14	$ 6,142.50	$ -	9.8	9.8
35LED	Corridor	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	8736	7,076	9	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,988	4,088	0.5	$ 612.65	$ 2,126.25	$ -	3.5	3.5
35LED	Office	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	398	781	0.2	$ 119.85	$ 978.75	$ 35	8.2	7.9
35LED	Game	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	2912	3,145	12	T 59 R LED	RTLED38	38	0.5	NONE	2,912	1,328	1,817	0.6	$ 289.91	$ 2,835.00	$ -	9.8	9.8
35LED	Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	2912	524	2	T 59 R LED	RTLED38	38	0.1	C-OCC	2,330	177	347	0.1	$ 54.74	$ 742.50	$ 35	13.6	12.9
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Lobby	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	8736	7,076	9	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,988	4,088	0.5	$ 612.65	$ 2,126.25	$ -	3.5	3.5
32LED	Work Shop	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	SW	2912	1,398	8	4 ft LED Tube	200732x2	30	0.2	NONE	2,912	699	699	0.2	$ 111.50	$ 1,869.60	$ -	16.8	16.8
32LED	Toilet	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Corridor	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	8736	7,076	9	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,988	4,088	0.5	$ 612.65	$ 2,126.25	$ -	3.5	3.5
35LED	Laundry	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	2912	3,145	12	T 59 R LED	RTLED38	38	0.5	NONE	2,912	1,328	1,817	0.6	$ 289.91	$ 2,835.00	$ -	9.8	9.8
32LED	Maintenance Storage	7	1T 32 R F 2 (ELE)	F42LL	60	0.4	SW	2912	1,223	7	4 ft LED Tube	200732x2	30	0.2	C-OCC	2,330	489	734	0.2	$ 115.30	$ 1,905.90	$ 35	16.5	16.2
20LED	Mechanical Room	20	S 28 P F 1 (ELE)	F41ILL	31	0.6	SW	2912	1,805	20	4 ft LED Tube	200732x1	15	0.3	NONE	2,912	874	932	0.3	$ 148.67	$ 2,904.00	$ -	19.5	19.5
20LED	Electric Room	10	S 28 P F 1 (ELE)	F41ILL	31	0.3	SW	2912	903	10	4 ft LED Tube	200732x1	15	0.2	NONE	2,912	437	466	0.2	$ 74.34	$ 1,452.00	$ -	19.5	19.5
35LED	Household Storage	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	2912	1,310	5	T 59 R LED	RTLED38	38	0.2	C-OCC	2,330	443	868	0.3	$ 136.84	$ 1,451.25	$ 35	10.6	10.3
35LED	Office B12	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	531	1,041	0.2	$ 159.80	$ 1,215.00	$ 35	7.6	7.4
32LED	Janitor B14	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	C-OCC	2,330	70	105	0.0	$ 16.47	$ 503.70	$ 35	30.6	28.5
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	NONE	2,912	111	151	0.1	$ 24.16	$ 236.25	$ -	9.8	9.8
35LED	Kitchen	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	2912	3,931	15	T 59 R LED	RTLED38	38	0.6	NONE	2,912	1,660	2,271	0.8	$ 362.39	$ 3,543.75	$ -	9.8	9.8
32LED	Kitchen	2	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	349	2	4 ft LED Tube	200732x2	30	0.1	NONE	2,912	175	175	0.1	$ 27.88	$ 467.40	$ -	16.8	16.8
35LED	Kitchen Storage	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	2912	786	3	T 59 R LED	RTLED38	38	0.1	C-OCC	2,330	266	521	0.2	$ 82.10	$ 978.75	$ 35	11.9	11.5
35LED	Dining 1	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	4368	4,717	12	T 59 R LED	RTLED38	38	0.5	NONE	4,368	1,992	2,726	0.6	$ 421.65	$ 2,835.00	$ -	6.7	6.7
35LED	Dining 2	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	SW	4368	4,717	12	T 59 R LED	RTLED38	38	0.5	NONE	4,368	1,992	2,726	0.6	$ 421.65	$ 2,835.00	$ -	6.7	6.7
35LED	1st Floor Office G89	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	398	781	0.2	$ 119.85	$ 978.75	$ 35	8.2	7.9
35LED	Office G99	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Office G100	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Office G101	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	398	781	0.2	$ 119.85	$ 978.75	$ 35	8.2	7.9
35LED	Office G84	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	398	781	0.2	$ 119.85	$ 978.75	$ 35	8.2	7.9
35LED	Office G85	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Office G86	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Office G87	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Office G88	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Corridor	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$ -	3.5	3.5
35LED	Reception	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	8736	4,717	6	T 59 R LED	RTLED38	38	0.2	NONE	8,736	1,992	2,726	0.3	$ 408.43	$ 1,417.50	$ -	3.5	3.5
35LED	Corridor	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.7	SW	8736	6,290	8	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,656	3,634	0.4	$ 544.58	$ 1,890.00	$ -	3.5	3.5
35LED	G102	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	G103	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	G104	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	G105	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	G106	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	G93	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	G94	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	G95	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	4368	786	2	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	266	521	0.1	$ 79.90	$ 742.50	$ 35	9.3	8.9
35LED	Multipurpose Room	13	T 32 R F 3 (ELE)	F43ILL/2	90	1.2	SW	2912	3,407	13	T 59 R LED	RTLED38	38	0.5	NONE	2,912	1,439	1,969	0.7	$ 314.07	$ 3,071.25	$ -	9.8	9.8
5LED	Multipurpose Room	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	175	1	2T XX R LED	2RTLED	25	0.0	NONE	2,912	73	102	0.0	$ 16.26	$ 202.50	$ -	12.5	12.5
35LED	Meeting Room	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	4368	2,359	6	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	797	1,562	0.3	$ 239.71	$ 1,687.50	$ 35	7.0	6.9
35LED	Visitor Waiting Room	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	531	1,041	0.2	$ 159.80	$ 1,215.00	$ 35	7.6	7.4
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	NONE	2,912	111	151	0.1	$ 24.16	$ 236.25	$ -	9.8	9.8
35LED	Toilet	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	NONE	2,912	111	151	0.1	$ 24.16	$ 236.25	$ -	9.8	9.8
35LED	Visitor Sally Port	5	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	4368	1,966	5	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	664	1,302	0.3	$ 199.75	$ 1,451.25	$ 35	7.3	7.1
35LED	Youth Sally Port	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	531	1,041	0.2	$ 159.80	$ 1,215.00	$ 35	7.6	7.4
35LED	Holding G12	3	T 32 R F 3 (ELE)	F43ILL/2	90	0.3	SW	4368	1,179	3	T 59 R LED	RTLED38	38	0.1	C-OCC	3,494	398	781	0.2	$ 119.85	$ 978.75	$ 35	8.2	7.9
5LED	Holding G12	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	4368	262	1	2T XX R LED	2RTLED	25	0.0	C-OCC	3,494	87	175	0.0	$ 26.82	$ 472.50	$ 35	17.6	16.3
35LED	Holding G14	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	Exam G14	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	Exam G15	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
5LED	Corridor	16	2T 32 R F 2 (u) (ELE)	FU2LL	60	1.0	SW	8736	8,387	16	2T XX R LED	2RTLED	25	0.4	NONE	8,736	3,494	4,892	0.6	$ 733.08	$ 3,240.00	$ -	4.4	4.4
35LED	Interview Room	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	Interview Room	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	Storage	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	2912	524	2	T 59 R LED	RTLED38	38	0.1	C-OCC	2,330	177	347	0.1	$ 54.74	$ 742.50	$ 35	13.6	12.9
35LED	Cloth Storage	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	2912	1,572	6	T 59 R LED	RTLED38	38	0.2	C-OCC	2,330	531	1,041	0.3	$ 164.21	$ 1,687.50	$ 35	10.3	10.1
64LED	Loading Area	7	175 MH	MH175/1	215	1.5	SW	4368	6,574	7	BAYLED78W	BAYLED78W	93	0.7	NONE	4,368	2,844	3,730	0.9	$ 577.06	$ 5,909.37	$ -	10.2	10.2
32LED	Receiving Area	10	1T 32 R F 2 (ELE)	F42LL	60	0.6	SW	2912	1,747	10	4 ft LED Tube	200732x2	30	0.3	C-OCC	2,330	699	1,048	0.3	$ 164.71	$ 2,607.00	$ 35	15.8	15.6
35LED	Dentist Exam	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	531	1,041	0.2	$ 159.80	$ 1,215.00	$ 35	7.6	7.4
35LED	Doctor Exam	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	C-OCC	3,494	531	1,041	0.2	$ 159.80	$ 1,215.00	$ 35	7.6	7.4
35LED	Nurse Station	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	4368	3,538	9	T 59 R LED	RTLED38	38	0.3	C-OCC	3,494	1,195	2,343	0.5	$ 359.56	$ 2,396.25	$ 35	6.7	6.6
35LED	Nurse	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	Medical	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	4368	393	1	T 59 R LED	RTLED38	38	0.0	C-OCC	3,494	133	260	0.1	$ 39.95	$ 506.25	$ 35	12.7	11.8
35LED	Corridor	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	8736	3,145	4	T 59 R LED	RTLED38	38	0.2	NONE	8,736	1,328	1,817	0.2	$ 272.29	$ 945.00	$ -	3.5	3.5
5LED	Central Lobby	13	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.8	SW	8736	6,814	13	2T XX R LED	2RTLED	25	0.3	NONE	8,736	2,839	3,975	0.5	$ 595.63	$ 2,632.50	$ -	4.4	4.4
5LED	Sally Port	5	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.3	SW	8736	2,621	5	2T XX R LED	2RTLED	25	0.1	NONE	8,736	1,092	1,529	0.2	$ 229.09	$ 1,012.50	$ -	4.4	4.4
5LED	Reception	10	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.6	SW	8736	5,242	10	2T XX R LED	2RTLED	25	0.3	NONE	8,736	2,184	3,058	0.4	$ 458.18	$ 2,025.00	$ -	4.4	4.4
5LED	YSC Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Conference Room	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	SW	4368	1,572	6	2T XX R LED	2RTLED	25	0.2	C-OCC	3,494	524	1,048	0.2	$ 160.90	$ 1,485.00	$ 35	9.2	9.0
5LED	Director Office	6	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	SW	4368	1,572	6	2T XX R LED	2RTLED	25	0.2	C-OCC	3,494	524	1,048	0.2	$ 160.90	$ 1,485.00	$ 35	9.2	9.0
35LED	Men's Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	NONE	2,912	111	151	0.1	$ 24.16	$ 236.25	$ -	9.8	9.8
5LED	Men's Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	175	1	2T XX R LED	2RTLED	25	0.0	NONE	2,912	73	102	0.0	$ 16.26	$ 202.50	$ -	12.5	12.5
32LED	Men's Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	2912	524	3	4 ft LED Tube	200732x2	30	0.1	NONE	2,912	262	262	0.1	$ 41.81	$ 701.10	$ -	16.8	16.8
35LED	Women's Locker	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.1	SW	2912	262	1	T 59 R LED	RTLED38	38	0.0	NONE	2,912	111	151	0.1	$ 24.16	$ 236.25	$ -	9.8	9.8
5LED	Women's Locker	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	2912	175	1	2T XX R LED	2RTLED	25	0.0	NONE	2,912	73	102	0.0	$ 16.26	$ 202.50	$ -	12.5	12.5
32LED	Women's Locker	3	1T 32 R F 2 (ELE)	F42LL	60	0.2	SW	2912	524	3	4 ft LED Tube	200732x2	30	0.1	NONE	2,912	262	262	0.1	$ 41.81	$ 701.10	$ -	16.8	16.8
35LED	Staff Lounge	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	SW	4368	1,572	4	T 59 R LED	RTLED38	38	0.2	NONE	4,368	664	909	0.2	$ 140.55	$ 945.00	$ -	6.7	6.7
35LED	Corridor	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.5	SW	8736	4,717	6	T 59 R LED	RTLED38	38	0.2	NONE	8,736	1,992	2,726	0.3	$ 408.43	$ 1,417.50	$ -	3.5	3.5
5LED	Superintendent	7	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.4	SW	4368	1,835	7	2T XX R LED	2RTLED	25	0.2	C-OCC	3,494	612	1,223	0.2	$ 187.72	$ 1,687.50	$ 35	9.0	8.8
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
5LED	Office	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	SW	4368	1,048	4	2T XX R LED	2RTLED	25	0.1	C-OCC	3,494	349	699	0.1	$ 107.27	$ 1,080.00	$ 35	10.1	9.7
35LED	2nd Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$ -	3.5	3.5
5LED	2nd Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	SW	8736	4,193	8	2T XX R LED	2RTLED	25	0.2	NONE	8,736	1,747	2,446	0.3	$ 366.54	$ 1,620.00	$ -	4.4	4.4
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8

Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	3rd Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$ -	3.5	3.5
5LED	3rd Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	SW	8736	4,193	8	2T XX R LED	2RTLED	25	0.2	NONE	8,736	1,747	2,446	0.3	$ 366.54	$ 1,620.00	$ -	4.4	4.4
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
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Energy Audit of Essex County Youth House
CHA Project No.29142
ECM-L3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	**No. of Fixtures**	**Standard Fixture Code**	**Fixture Code**	**Watts per Fixture**	**kW/Space**	**Exist Control**	**Annual Hours**	**Annual kWh**	**Number of Fixtures**	**Standard Fixture Code**	**Fixture Code**	**Watts per Fixture**	**kW/Space**	**Retrofit Control**	**Annual Hours**	**Annual kWh**	**Annual kWh Saved**	**Annual kW Saved**	**Annual $ Saved**	**Retrofit Cost**	**NJ Smart Start Lighting Incentive**	**Simple Payback With Out Incentive**	**Simple Payback**
Field Code	**Unique description of the location - Room number/Room name: Floor number (if applicable)**	**No. of fixtures before the retrofit**	**Lighting Fixture Code**	**Code from Table of Standard Fixture Wattages**	**Value from Table of Standard Fixture Wattages**	**(Watts/Fixt) * (Fixt No.)**	**Pre-inst. control device**	**Estimated daily hours for the usage group**	**(kW/space) * (Annual Hours)**	**No. of fixtures after the retrofit**	**Lighting Fixture Code**	**Code from Table of Standard Fixture Wattages**	**Value from Table of Standard Fixture Wattages**	**(Watts/Fixt) * (Number of Fixtures)**	**Retrofit control device**	**Estimated annual hours for the usage group**	**(kW/space) * (Annual Hours)**	**(Original Annual kWh) - (Retrofit Annual kWh)**	**(Original Annual kW) - (Retrofit Annual kW)**	**(kWh Saved) * ($/kWh)**	**Cost for renovations to lighting system**	**Prescriptive Lighting Measures**	**Length of time for renovations cost to be recovered**	**Length of time for renovations cost to be recovered**
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	4th Floor Lobby	7	T 32 R F 3 (ELE)	F43ILL/2	90	0.6	SW	8736	5,504	7	T 59 R LED	RTLED38	38	0.3	NONE	8,736	2,324	3,180	0.4	$ 476.51	$ 1,653.75	$ -	3.5	3.5
5LED	4th Floor Lobby	8	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.5	SW	8736	4,193	8	2T XX R LED	2RTLED	25	0.2	NONE	8,736	1,747	2,446	0.3	$ 366.54	$ 1,620.00	$ -	4.4	4.4
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
35LED	Wing Lobby	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	SW	8736	12,580	16	T 59 R LED	RTLED38	38	0.6	NONE	8,736	5,311	7,268	0.8	$ 1,089.15	$ 3,780.00	$ -	3.5	3.5
5LED	Wing Lobby	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.1	SW	8736	1,048	2	2T XX R LED	2RTLED	25	0.1	NONE	8,736	437	612	0.1	$ 91.64	$ 405.00	$ -	4.4	4.4
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
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32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
32LED	Cell	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2912	175	1	4 ft LED Tube	200732x2	30	0.0	NONE	2,912	87	87	0.0	$ 13.94	$ 233.70	$ -	16.8	16.8
143LED	Outdoor Lighting	12	HPS 100 POLE	HPS100/1	138	1.7	SW	4368	7,233	12	ALED52	ALED52	60	0.7	NONE	4,368	3,145	4,088	0.9	$ 632.47	$ 9,266.40	$ 2,100	14.7	11.3
S	**Total**	**1,039**				**84.3**			**459,627**	**1,039**				**35.9**			**189,045**		**48.4**	**41,285**	**269,030**	**$4,200**		
S																	**Demand Savings**			**48.4**	**$2,051**			
S																	**kWh Savings**			**270,583**	**$39,234**			

APPENDIX D

New Jersey Board of Public Utilities Incentives

i. **Smart Start**

ii. **Direct Install**

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

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

I. SMART START

NJ SmartStart Buildings

Program Overview

With New Jersey SmartStart Buildings ...

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

Special Notice

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

Visit the Sandy web page for details and important links.

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

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

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

Getting Started

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

PAST PROGRAMS

TOOLS AND RESOURCES

PROGRAM UPDATES

CONTACT US

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

Support for Custom Energy-Efficiency Measures

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

Incentives for Qualifying Equipment and Projects

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

Find out more about equipment incentives

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

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COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

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NJ SMARTSTART BUILDINGS

EQUIPMENT INCENTIVES

FOOD SERVICE EQUIPMENT

APPLICATION FORMS

TOOLS AND RESOURCES

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

Home » Commercial & Industrial » Programs » NJ SmartStart Buildings

Equipment Incentives

Special Notice

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

Visit the Sandy web page for details and important links.

More reasons for a smart start on your next project!

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

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

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

In order to be eligible to receive financial incentives under this Program, Applicants mus receive electric and/or gas service from one of the regulated electric and/or gas utilities the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

Electric Chillers

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

Gas Cooling

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

PAST PROGRAMS

TOOLS AND RESOURCES

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CONTACT US

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

Electric Unitary HVAC

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

Ground Source Heat Pumps

Closed Loop ($450-750 per ton)

Gas Heating

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

Variable Frequency Drives

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

Natural Gas Water Heating

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

Premium Motors

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

Refrigerator/Freezer Case Premium Efficiency Motors (ECM)

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

Prescriptive Lighting

New Linear Fluorescent

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

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

Lighting Controls

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

Refrigeration

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

Food Service Equipment

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

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

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

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

Other Equipment Incentives*

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

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

II. DIRECT INSTALL

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

PROGRAMS

NJ SMARTSTART BUILDINGS

PAY FOR PERFORMANCE

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PROGRAM

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

PARTICIPATION STEPS

PARTICIPATING CONTRACTORS

SUSTAINABLE JERSEY

ENERGY BENCHMARKING

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

SBC CREDIT PROGRAM

Direct Install

NEW JERSEY'S CLEAN ENERGY PROGRAM
DIRECT Install

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

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

ELIGIBILITY

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

SYSTEMS & EQUIPMENT ADDRESSED BY THE PROGRAM

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

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

III. PAY FOR PERFORMANCE (P4P)

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

PROGRAMS

NJ SMARTSTART BUILDINGS

PAY FOR PERFORMANCE

EXISTING BUILDINGS

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NEW CONSTRUCTION

FAQS

BECOME A PARTNER

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PROGRAM

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

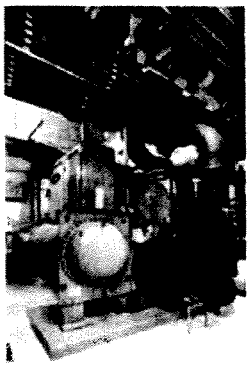
ENERGY BENCHMARKING

Pay for Performance - Existing Buildings

Download program applications and incentive forms.

The Greater the Savings, the Greater Your Incentives

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



Eligibility

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

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

ENERGY STAR Portfolio Manager

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

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

Incentives

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

SBC CREDIT PROGRAM

PAST PROGRAMS

TOOLS AND RESOURCES

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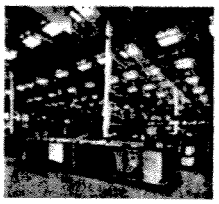
CONTACT US

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

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



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

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

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

Steps to Participation

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

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New Jersey's Clean Energy PROGRAM
Your Power to Save
njcleanenergy.com

BPU New Jersey Board of Public Utilities

PAY FOR PERFORMANCE APPLICATION FORM

July 1, 2014 – June 30, 2015

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

Instructions

1. Read the program material to determine project qualification.
2. Read the Participation Agreement and sign where indicated.
3. Fill out all applicable spaces on this form.
4. Provide a copy of the customer's company W-9 form.
5. Provide the most recent consecutive 12 month period of utility bills for the project for all accounts, organized in chronological order and separated by account. Utilize Utility Tool for applications with multiple accounts to organize data.
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 DIRECTLY to the Market Manager – see back of this form.

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

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

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

Partner Information

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

Project Information

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

Funding

☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.

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

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

Additional Project information

Additional Utility Account(s)

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

Additional Comments:

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

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

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

Visit our website: NJCleanEnergy.com/P4P

*Incentives/Requirements subject to change.

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 Charge 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 designee 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, metals, 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 rate to workers employed in the performance of any construction undertaken in connection with Board of Public Utilities financial assistance, or undertaken to fulfill any condition of receiving Board of Public Utilities financial assistance, including the performance of any contract to construct, renovate or otherwise prepare a facility, the operations of which are necessary for the receipt of Board of Public Utilities financial assistance. By submitting an application, or accepting program incentives, applicant agrees to adhere to New Jersey Prevailing Wage requirements, as applicable.

PROGRAM – 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 Internal 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 PROVIDER 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
PARTNER SIGNATURE
By signing, I certify that I have read, understand and agree to the Participation Agreement listed above.

IV. ENERGY SAVINGS IMPROVEMENT PLAN (ESIP)

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

HURRICANE SANDY

PROGRAMS

NJ SMARTSTART BUILDINGS

PAY FOR PERFORMANCE

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PROGRAM

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

ENERGY BENCHMARKING

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

SBC CREDIT PROGRAM

PAST PROGRAMS

TOOLS AND RESOURCES

PROGRAM UPDATES

CONTACT US

Home » Commercial & Industrial » Programs

Energy Savings Improvement Program

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

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

Local Government
School Districts (K-12)

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

The Board also adopted protocols to measure energy savings:

Measuring Energy Savings
Procedures for Implementation

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

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

FIRST STEP – ENERGY AUDIT

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

ENERGY REDUCTION PLANS

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

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

ESIP PROGRAM

Final version 42413

BPU RULES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX E

Photovoltaic Analysis

Essex County
Youth House

Cost of Electricity	$0.169	/kWh
Electricity Usage	256,240	kWh/yr
System Unit Cost	$4,000	/kW

Photovoltaic (PV) Solar Power Generation - Screening Assessment

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	Federal Tax Credit	New Jersey Renewable ** SREC	Payback (without incentive)	Payback (with incentive)
$	kW	kWh	therms	$	$	$	$	$	Years	Years
$240,000	**60.0**	**76,493**	**0**	**$12,927**	**0**	**$12,927**	**$0**	**$13,004**	**18.6**	**9.3**

** Estimated Solar Renewable Energy Certificate Program (SREC) SREC for 15 Years= $170 /1000kwh

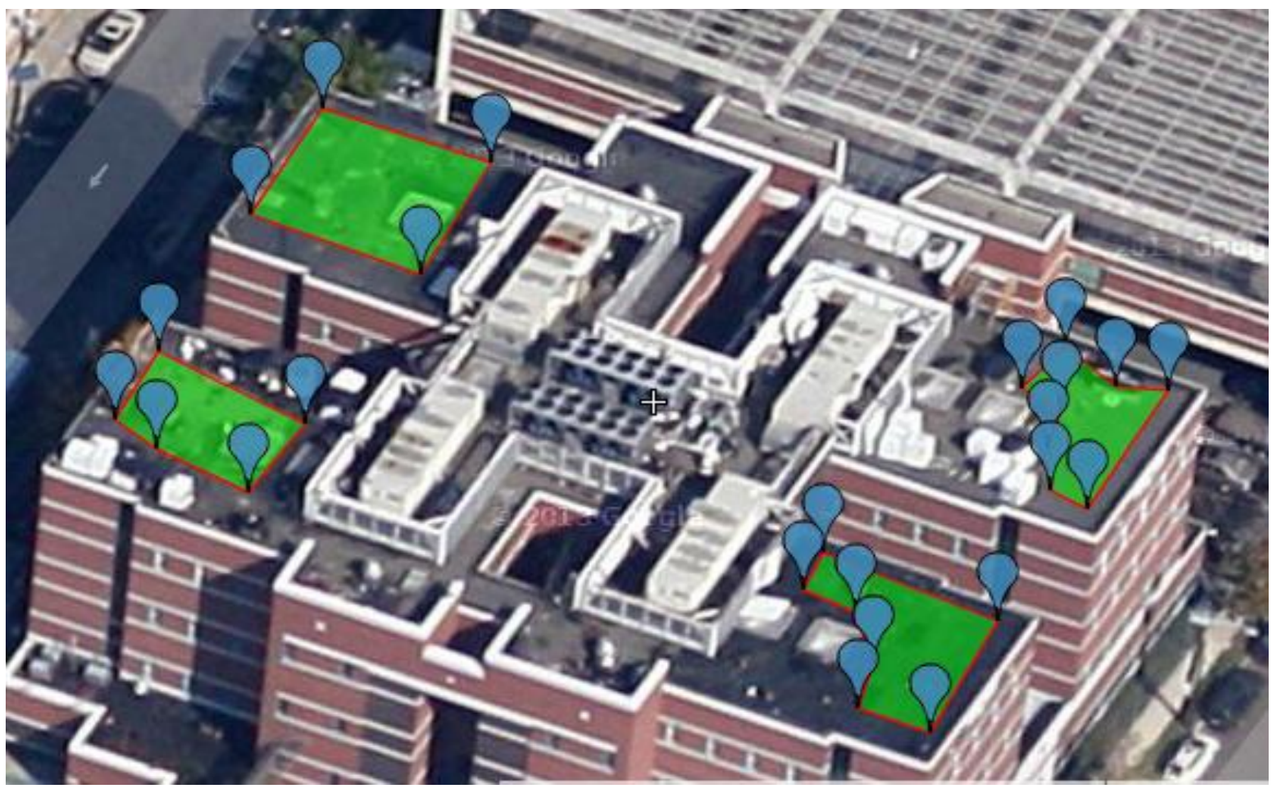
Area Output*
1,477 m2
15,903 ft2

Perimeter Output*
177 m
581 ft

Available Roof Space for PV:
(Area Output - 10 ft x Perimeter) x 85%
8,576 ft2

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

8	watt/ft2	
68,609	DC watts	
60	kW	Enter into PV Watts



PV Watts Inputs***

Array Tilt Angle	20	Enter into PV Watts (always 20 if flat, if pitched - enter estimated roof angle)
Array Azimuth	180	Enter into PV Watts (default)
Zip Code	07044	Enter into PV Watts
DC/AC Derate Factor	0.83	Enter info PV Watts

PV Watts Output
76,493 annual kWh calculated in PV Watts program

% Offset Calc

Usage	256,240	(from utilities)
PV Generation	76,493	(generated using PV Watts)
% offset	30%	

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

PVWatts® Calculator

NREL NATIONAL RENEWABLE ENERGY LABORATORY

70 Duryea Street, Newark, NJ, 07102
» Change Location

Release Notice (?) | HELP | ALL NREL SOLAR TOOLS

Go to system info

RESOURCE DATA | SYSTEM INFO | RESULTS

76,493 kWh per Year *

RESULTS

Print Results

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Energy Value ($)
January	2.78	4,518	687
February	3.52	5,111	777
March	4.34	6,796	1,033
April	4.95	7,239	1,100
May	5.69	8,355	1,270
June	5.86	8,114	1,233
July	5.73	8,100	1,231
August	5.47	7,666	1,165
September	4.91	6,848	1,041
October	3.99	5,948	904
November	2.68	4,041	614
December	2.35	3,758	571
Annual	4.36	76,494	$ 11,626

User Comments

Download Results: Monthly | Hourly

Find A Local Installer

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

Location and Station Identification

Requested Location	**70 Duryea Street, Newark, NJ, 07102**
Weather Data Source	**(TMY2) NEWARK, NJ 2.2 mi**
Latitude	**40.7° N**
Longitude	**74.17° W**

PV System Specifications *(Commercial)*

DC System Size	**60 kW**
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**

Initial Economic Comparison

Average Cost of Electricity Purchased from Utility	**0.15 $/kWh**
Initial Cost	**2.60 $/Wdc**
Cost of Electricity Generated by System	**0.13 $/kWh**

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

CHP SCREENING LEVEL PRELIMINARY EVALUATION
YOUTH CENTER **22-Dec-14**
CASE 1 - a 300kW Reciprocating Engines **1**

BASE CASE		
Boiler Efficiency	80%	
Natural Gas Cost	7.81	$/MMBtu
Electricity Purchase Cost	0.15	$/kWh
Total Electricity Purchase Cost	$315,570	
Total Gas Purchase Cost	$21,393	
Total Energy Purchase Cost	**$336,963**	
CHP CASE		
CHP Basis	Recip Cogen Eng.	
Engine Generator	Ener-G	
Configuration	Recip. Engines	
Power Gross Output	300	kW
Plant Auxiliary Power	6%	
Engine Availability	0.97	
Plant Net Output	282	kW
Fuel Gas LHV	1736	Btu/scft
Fuel Gas HHV	1927	Btu/scft
Fuel Consumption (HHV)	2.3	MMBtu/hr
Heat Recovery Jacket Water Cooler	0.8	MMBtu/hr
Heat Recovery Engine Exhaust	0.4	MMBtu/hr
Engine Maintenance Cost	0.018	$/kWh
Natural Gas Cost	7.81	$/MMBtu
Electricity Purchase Cost	0.15	$/kWh
Total Electricity Purchase Cost	$0	
Total Gas Purchase Cost	$263,410	
Engine Maintenance Cost	$0	
Total CHP Operating Cost	**$263,410**	
Potential Maximum NJBPU Grant	**$600,000**	
ECONOMIC EVALUATION		
Annual Energy Cost Savings	**$73,553**	
Project Cost Multiplier	3,800	$/kW
Project Cost (Incentives Not Included)	$1,140,000	
Total Cost (+20% Soft Cost Markup)	$1,368,000.0	
Simple Payback	**18.6**	**Years**
	10.4	

Notes:
1) Existing electrical loads are an based on electrical utility data provided by the facility.
2) Existing natural gas loads are based on natural gas utility data provided by the facility.
3) Reciprocating engine purchase and maintenance costs are budget costs are estimated based on previous projects

BASE CASE

Month	Days	Electricity			Natural Gas (HHV)		Heating Hot Water			Heat to Power	Chiller Load
		Peak kW	Average kW	Total kWh	Total MMBtu	Average MMBtu/hr	Average MMBtu/hr	Total MMBtu	Avg. Flow GPM	Ratio	Ton
Jan	31	248.30	193.5	143,942	54.8	0.1	0.05	38	3	0.06	0
Feb	28	253.90	223.3	150,078	37.6	0.1	0.04	26	2	0.04	0
Mar	31	328.10	215.4	160,240	516.9	0.7	0.48	357	24	0.43	50
Apr	30	313.10	207.5	149,393	217.5	0.3	0.21	150	10	0.20	100
May	31	495.50	253.2	188,408	9.6	0.0	0.01	7	0	0.01	200
Jun	30	530.20	346.0	249,144	79.8	0.1	0.08	55	4	0.04	300
Jul	31	561.30	285.1	212,086	80.5	0.1	0.07	56	4	0.04	300
Aug	31	416.90	259.1	192,805	104.7	0.1	0.10	72	5	0.07	250
Sep	30	321.00	225.7	162,483	76.5	0.1	0.07	53	4	0.07	200
Oct	31	328.40	209.5	155,855	290.2	0.4	0.27	200	13	0.24	100
Nov	30	255.20	214.5	154,410	404.9	0.6	0.39	279	19	0.45	20
Dec	31	241.50	212.8	158,296	864.5	1.2	0.80	596	40	0.97	0
	Annual	358		2,077,140	2,738		0.21	1,889	11	0.18	127

CHP CASE

Month	Power Generation		Power Import	Engine Gas Usage (HHV)		Absorption Chiller			Total Heating Required		Engine Heat Recovery Available			Heat Used by Facility		Existing Boilers		Total Fuel Consumption	CHP Efficiency
	Average kW	Total kWh	kWh	Average MMBtu/hr	Total MMBtu	Cooling Ton	Power Red. kW	Heat MMBtu/hr	Total MMBtu/hr	Total MMBtu	Coolers MMBtu/hr	Exhaust MMBtu/hr	Average MMBtu/hr	From Recip. Engine MMBtu/hr	MMBtu	Heat MMBtu	Gas Use MMBtu	MMBtu	%
Jan	248	179,193	0	2.01	1,450	0	0.0	0.0	0.05	38	0.77	0.33	1.10	0.05	37	1	1	1,452	45%
Feb	254	165,502	0	2.06	1,340	0	0.0	0.0	0.04	26	0.77	0.34	1.11	0.04	25	1	1	1,341	45%
Mar	282	203,514	0	2.28	1,647	50	35.0	0.8	1.28	952	0.77	0.38	1.15	1.15	830	122	153	1,800	105%
Apr	282	196,949	0	2.28	1,594	100	70.0	1.6	1.81	1,302	0.77	0.38	1.15	1.15	803	499	624	2,218	105%
May	282	203,514	0	2.28	1,647	200	140.0	3.2	3.21	2,387	0.77	0.38	1.15	1.15	830	1,558	1,947	3,594	105%
Jun	282	196,949	0	2.28	1,594	300	210.0	4.8	4.88	3,511	0.77	0.38	1.15	1.15	803	2,708	3,385	4,979	105%
Jul	282	203,514	0	2.28	1,647	300	210.0	4.8	4.87	3,627	0.77	0.38	1.15	1.15	830	2,797	3,496	5,143	105%
Aug	282	203,514	0	2.28	1,647	250	175.0	4.0	4.10	3,048	0.77	0.38	1.15	1.15	830	2,218	2,773	4,420	105%
Sep	282	196,949	0	2.28	1,594	200	140.0	3.2	3.27	2,357	0.77	0.38	1.15	1.15	803	1,554	1,942	3,536	105%
Oct	282	203,514	0	2.28	1,647	100	70.0	1.6	1.87	1,391	0.77	0.38	1.15	1.15	830	561	701	2,348	105%
Nov	255	178,232	0	2.07	1,443	20	14.0	0.3	0.71	510	0.77	0.34	1.11	0.71	495	15	19	1,462	85%
Dec	242	174,286	0	1.95	1,411	0	0.0	0.0	0.80	596	0.77	0.32	1.10	0.80	579	18	22	1,433	93%
Annual	271	2,305,628	0	2.20	18,663	127	89	2.0	2.24	19,745	0.77	0.36	1.14	0.90	7,693	12,052	15,065	33,727	92%

Budgetary Cost	Annual Utility Usage		Total Savings	New Jersey Incentive	Payback (without Incentive)	Payback (with Incentive)	Recommended
	Existing Utility Cost	CHP Operating Cost					
$	$	$	$	$	Years	Years	Y/N
1,368,000	336,963	263,410	73,553	600,000	18.6	10.4	FS

APPENDIX F

Photos

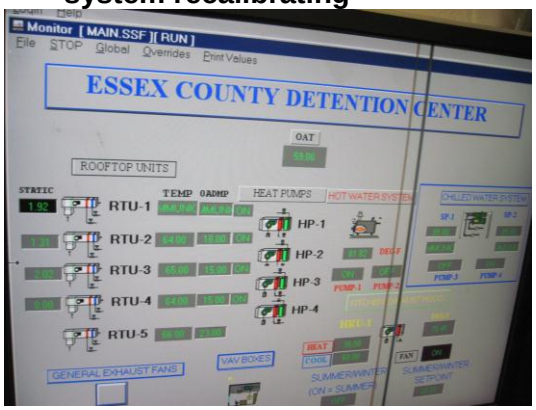
ECM-1 Replace the HHW boilers with condensing HHW boilers

Existing Boiler

ECM-2 Install VFDs on the chilled water pump motor

Existing Pumps

ECM-3 Central DDC system Retro-commissioning and VAV system recalibrating



Existing Control Screen

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

Existing DHW Heaters

ECM-5 Replace pool water heater with condensing water heater

No Pictures Available

ECM-6 Replace dishwasher electric booster heater with gas booster heater

No Pictures Available

ECM-7 Install walk-in cooler/freezer control

No Pictures Available

ECM-8 Replace plumbing fixtures with low flow fixtures

No Pictures Available

ECM-L1 Lighting Replacement / Upgrades

No Pictures Available

ECM-L2 Install Lighting Controls (Occupancy Sensors)

No Pictures Available

APPENDIX G

EPA Benchmarking Report

ENERGY STAR® Statement of Energy Performance

N/A

ENERGY STAR® Score[1]

Youth House

Primary Property Function: Prison/Incarceration
Gross Floor Area (ft²): 105,000
Built: 1997

For Year Ending: September 30, 2013
Date Generated: December 18, 2014

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

Property & Contact Information

Property Address	Property Owner	Primary Contact
Youth House 70 Duryea Street Newark, New Jersey 07102	_____ , (____)____-_____	____ _____ , (____)____-_____ _____

Property ID: 4279945

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
93.6 kBtu/ft²

Source EUI
239.3 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	7,087,202 (72%)
Natural Gas (kBtu)	2,737,552 (28%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	66.4
National Median Source EUI (kBtu/ft²)	169.9
% Diff from National Median Source EUI	41%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	1,094

Signature & Stamp of Verifying Professional

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

Signature: _____Date: _____

Licensed Professional

____ _____
,
(____)____-_____
_____

Professional Engineer Stamp (if applicable)