POMPTON LAKES BOARD OF EDUCATION
POMPTON LAKES HIGH SCHOOL
ENERGY ASSESSMENT

FOR
NEW JERSEY
BOARD OF PUBLIC UTILITIES

November 2012

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CHA PROJECT NO. 24698

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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 school 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 school staff and spot measurements taken in the field.

1.0 EXECUTIVE SUMMARY

This energy audit is performed by CHA in connection with the New Jersey Board of Public Utilities' Local Government Energy Audit Program for the Pompton Lakes Board of Education. The purpose of this report is to convey the findings of the energy audit to identify energy savings potential associated with major energy consumers and inefficient practices. This report details the results of the energy audit conducted for:

Building Name	Address	Square Feet	Construction Date
Pompton Lakes High School	44 Lakeside Avenue Pompton Lakes, NJ 07442	58,555	1931

The Energy Conservation Measures (ECMs) and Operations and Maintenance Measures (OMMs) identified in this report are energy savings potential that if implemented will allow the school to use electricity and gas more effectively and efficiently. These measures if pursued may qualify for the New Jersey SmartStart Buildings Program and/or Direct Install Program. Ultimately the goal of this audit and the implementation of these measures are to facilitate the State of New Jersey's green initiative by reducing emissions, using less energy and lowering operating costs.

The potential annual energy cost savings for each energy conservation measure (ECM) is shown in Table 1 below. Each measure's annual savings are dependent on that measure alone. No interactive affects have been included. The lighting ECM's are presented as three options. Only one option can be chosen.

Table 1: Summary of Energy Conservation Measures

Summary of Energy Conservation Measures							
Energy Conservation Measure		**Approx Costs ($)**	**Approx Savings ($/year)**	**Payback (Years) w/o Incentive**	**Potential Incentive ($)***	**Payback (Years) w/ Incentive**	**Recommended**
ECM 1	Replace Door & Window Seals	33,000	7,900	4.2	0	4.2	X
ECM 2	Add Insulation in Attic	4,000	23,600	0.2	0	0.2	X
ECM 3	Replace Windows & Add Insulation to C-2 Doorway	35,000	2,100	16.7	0	16.7	
ECM 4	Adjust DDC Schedules (Peak Demand Reduction)	10,000	6,700	1.5	0	1.5	X
ECM 5	Replace Domestic Water Heater (DWH)	20,000	17,400	1.1	600	1.1	X
ECM 6	Install Network Controller	2,000	2,800	0.7	0	0.7	X
ECM 7	Lighting Replacement / Upgrades	45,000	9,100	4.9	4,500	4.5	
ECM 8	Install Lighting Controls – Occupancy Sensors	11,000	4,800	2.3	1,900	1.9	
ECM 9	Lighting Replacements w/ Lighting Controls	56,000	12,000	4.7	6,400	4.1	X
ECM 10	Water Conservation (Low Flow Fixtures)	99,000	1,600	>20	0	>20	
ECM 11	Replace Dishwasher Electric Booster Heater	20,000	1,700	11.8	500	11.5	X

The measures recommended by CHA are typically less than a 15 year payback period, in accordance with the New Jersey Energy Savings Improvement Plan which has a maximum payback periods of 15 years to be incentivized. If the recommended measures are implemented a total potential annual savings of $72,100 may be realized with a payback period of 2 years.

2.0 INTRODUCTION AND BACKGROUND

The Pompton Lakes High School is a 58,555 square foot building consisting of 2 floors. The building was constructed in 1931 with a 2 story masonry structure built in 1961 of approximately 13,000 square feet. The school includes the following spaces: classrooms, offices, multi-purpose room, kitchen, storage, toilet rooms, gymnasium, auditorium, and a library. The school hours of operation are from 7:00 AM – 11:00 PM Monday through Friday, with various after-school activities and Saturdays 8:30AM to 4:00PM from January to March. The summer hours of operation are 7:00AM to 3:00PM Monday through Friday. The school has approximately 663 students and 44 full-time equivalent teachers.

New Jersey's Clean Energy Program, funded by the New Jersey Board of Public Utilities, supports energy efficiency and sustainability for Municipal and Local Government Energy Audits. Through the support of a utility trust fund, New Jersey is able to assist state and local authorities in reducing energy consumption while increasing comfort.

Figure 1: Pompton Lakes High School

3.0 UTILITY

Utilities include electricity, natural gas, and potable water. Electricity is delivered and supplied by Jersey Central Power & Light. Natural gas is delivered and supplied by Public Service Electric and Gas Company. The school pays the Pompton Lakes Borough Municipal Utilities Authority for potable water.

For the 12-month period ending in August 2012, the utilities usage for the building was as follows:

Table 2: Actual Cost & Site Utility Usage

Electric		
Annual Usage	828,247	kWh/year
Annual Cost	129,573.88	$
Blended Rate	0.156	$/kWh
Supply Rate	0.139	$/kWh
Demand Rate	6,15	$/kW
Peak Demand	248.60	kW
Min. Demand	153.40	kW
Avg. Demand	194.83	kW
Natural Gas		
Annual Usage	48,104	Therms/year
Annual Cost	117,152	$
Rate	0.90	$/Therm
Water		
Annual Usage	810,000	gallons/yr
Annual Cost	1,235	$
Rate	1.525	$/kgallon

Electrical usage was generally higher in the summer months when air conditioning equipment was operational. Natural gas consumption was highest in winter months for heating. See Appendix A for a detailed utility analysis.

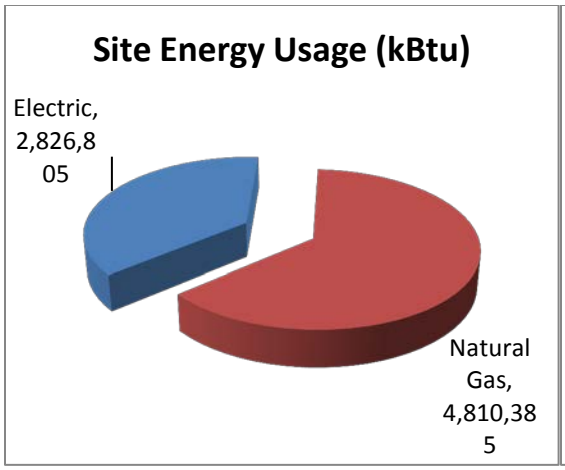


Figure 2: Annual Site Energy Usage

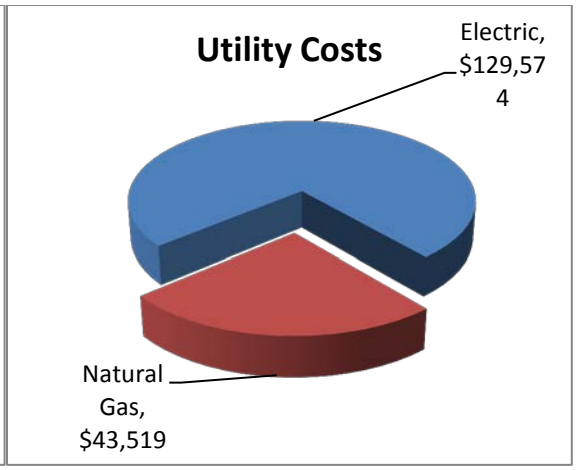


Figure 3: Annual Energy Cost

Under New Jersey's energy deregulation law, the supply portion of the electric (or natural gas) bill is separated from the delivery portion. With the supply portion open to competition, customers can shop around for the best price on their energy supplies. Their electric and natural gas distribution utilities will still deliver those supplies through their wires and pipes – and respond to emergencies, should they arise – regardless of where those supplies are purchased. Purchasing your 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 your service. 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.

4.0 EXISTING CONDITIONS & AREAS OF ENERGY OPPORTUNITY

Energy conservation measures (ECM) are energy savings improvement recommendations that require a financial investment. These recommendations are justified by the energy and/or cost savings realized over time. Operational and maintenance measures (OMM) are low or no cost operational opportunities, which can be implemented to have positive impacts on overall building operation, comfort levels, or energy usage.

4.1 Building - General

The original building is constructed of block walls and brick veneer this includes the taller high bay gym and auditorium. The majority of the interior walls are block walls with painted plaster; some spaces, such as mechanical rooms and closets use painted block walls only.

The flat roof system is comprised of a structural steel framing with a metal deck having rigid foam board insulation. The upper section of the roof is light gray asphalt roofing shingles on the flat sections and gray slate shingles on the sloped sections. The lower sections of the roof are made out of black rubber membrane roofing.

Windows and doors are original to the time of construction back in the 30's. Windows are aluminum frame double pane and doors are either aluminum or older wooden style and have bad seals and sweeps which make them less efficient because of the infiltration factor. One window on the east side of the gymnasium appeared to have condensation on the day of the field audit.

4.1.1 ECM-1 Replace Door & Window Seals

The school has two basic sizes of windows, one being smaller and one larger. There are also multiple different sized windows throughout the building. The seals around exterior doors and windows over time fail. This leads to unwanted infiltration of unconditioned outside air and exfiltration of conditioned air resulting in increased heating and cooling energy usage. This measure calls for the replacement of all exterior door and window seals.

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

ECM-1 Door & Window Seals

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
33,000	0	0	8,800	7,900	0	7,900	0.2	0	4.2	4.2

Expected Life: 5 years

Lifetime Savings: 0 kWh 44,000 therms $39,500

* No incentives are available for this measure.

This measure is recommended.

4.1.2 ECM-2 Add Insulation in Attic

There is an attic space below the pitched portion of the roof, approximately SF. The insulation in this area is poor or non-existent. This ECM evaluated adding inches of 9 inches of blown-in insulation to the attic space. This ECM, if implemented will result in thermal savings. This work could possibly be done in house to reduce first costs.

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

ECM-2 Add Insulation in Attic

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
4,000	0	0	26,300	23,600	0	23,600	176.2	0	0.2	0.2

Expected Life: 30 years

Lifetime Savings: 0 kWh 789,000 therms $708,000

* No incentives are available for this measure.

This measure is recommended.

4.1.3 ECM-3 Replace Windows & Add Insulation to C-2 Doorway

The hallway l near the C-2 doorway is very drafty, especially in the colder winter months. The windows are old and not properly sealed and there is a large amount of infiltration. This measure evaluates the replacement of the windows on each side of the doors and includes removing and infilling the bottom sections of the windows.

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

ECM-3 Replace Windows & Add Insulation to C-2 Doorway

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
35,000	0	0	2,300	2,100	0	2,100	0.8	0	16.7	16.7

Expected Life: 30 years

Lifetime Savings: 0 kWh 69,000 therms $63,000

* No incentives are available for this measure.

This measure is not recommended.

This measure is not recommended due to the payback of the measure, however the customer requested this ECM due to the decreased comfort level of the doorway caused by the infiltration and the draft that comes through at that location.

4.2 HVAC Systems

The building's boiler systems for heating were recently converted from steam to hot water service. These recent improvements included new Aerco condensing modular boilers with a new DDC control and BMS system. There are two Emerson premium efficiency pumps for the hot water heating system. New unit vents have been installed along with new HVAC systems for the gymnasium, auditorium and the media center. The gymnasium and auditorium are each served by their own AAON heating and cooling packaged rooftop unit. The AAON rooftop units are a model number RN-040-8-0-EB09-3D9 with a 40 ton capacity. The new unit ventilators were installed to provide heating and ventilation only. The gymnasium and auditorium were provided with roof top HVAC systems which are connected to the BMS system and provide the spaces with heating and cooling. The media center is also provided with an older rooftop unit which may not be tied into the BMS system.

The newly added Aerco Benchmark 2.0 natural gas fired condensing modular hot water boilers were most recently added to the building for the main source of heating. These boilers are very efficient and it is great that the system was converted from steam to hot water. The outlet temperature of the Aerco system, which is controlled by direct digital control, was 75°F at the time of the field audit. There was also an expansion tank added to the new hot water boiler system.

There are two roof top mounted Mitsubishi Electric MUY-D30NA model condensing units located on the saw blade style lower roof above the freshmen wing of the building. These unitary small A/C units have a rated cooling capacity of 30,700 Btu/h, minimum cooling capacity of 9,800 Btu/h, SEER of 14.5 Btu/h/W, and a total input of 3,850 W. There is a Lennox Industries Inc. model number CHP20-413-1Y roof top unit located on the saw blade style lower roof above the freshman wing of the building with a cooling capacity of 33.60 MBtu, heating capacity of 34.20 MBtu, a SEER of 11.05 and a HSPF of 7.35. There is a Trane model number TTA072D300A0 and a Trane model number 4TTA3042A3000AA roof mounted air conditioning unit on the school. These 3.5 ton units each have a cooling capacity of 42,000 Btu/h and a SEER of 14.50. There is another Mitsubishi Electric condensing unit roof top air conditioning unit, model number PUY-A24NHA4, serving the building

The unit ventilators located in rooms 10 and 15 are original and are having trouble with air conditioning. The main office has window air conditioning units. The library has a 40 year old, not working properly and not integrated into the BMS system. The Guidance office has a central air unit not integrated into the BMS system. Room 207 has air conditioning controlled form the room. The senior room, new art room, room 102 computer lab, and Mac Computer lab each have their own split system a/c units.

In the past the remote access BMS system was blown out by a power surge but since then an uninterruptable power supply (UPS) has been installed.

Specifics on mechanical equipment can be found within the equipment inventory located in Appendix B.

4.3 Control Systems

The building has a direct digital control system. The hydronic heating system including the classroom unit ventilators, HVAC systems, RTUs, and the natural gas fired hot water boiler utilize the DDC system. The gymnasium and auditorium were provided with roof top HVAC systems which are connected to the BMS system. There is also an Aerco boiler management system (BMS) that is used. The DDC and BMS systems are managed and serviced by a company by the name ATC.

Typical set points range between 70 and 72 degrees Fahrenheit and the unoccupied set points range from around 67 to 73 degrees Fahrenheit. The school is about 30% cooled with the main office, auditorium, gymnasium, weight room, room 10, and room 15 being cooled.

4.3.1 ECM-4 Install Direct Digital Controls Schedules (Peak Demand Reduction)

The direct digital control (DDC) systems use electrical signals to manage HVAC equipment. In combination with a building management system (BMS) which allows for trending, scheduling and remote control, the DDC and BMS system will save natural gas and electrical energy. The system is able to set a schedule for occupied and unoccupied set points and when the HVAC equipment can be turned off. The DDC control system has the capacity to manage set points and set schedules for night setbacks, weekend and holiday shutdown. Currently, all of the HVAC equipment is turned on all at once and this could cause a high value in peak electric demand. This high demand spike in the utility bills will be much more expensive. Instead of having all of the equipment start at the same time a staggered start up can be implemented. What this does is stage all of the equipment, especially the equipment with a large demand, to start up at different times. This system can be more efficiently utilized in order to lower utility electric and natural gas costs due to HVAC equipment use decrease.

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

ECM-4 Install Direct Digital Controls Schedules (Peak Demand Reduction)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
10,000	0	100	0	6,700	0	6,700	9.1	0	1.5	1.5

Expected Life: 15 years

Lifetime Savings: 0 kWh 0 therms $100,500

* No incentives are available for this measure.

This measure is recommended.

4.4 Domestic Hot Water System

Pompton Lakes High School has one domestic hot water heater located in the boiler room. The water heater is a Rheem Ruud Universal (G100-400A-1) natural gas fired commercial domestic hot water heater with a capacity of 103 gallons with 80% efficiency and an input of 399,900 BTU. The domestic hot water heater serves the kitchen, toilet rooms and sinks located throughout the school.

4.4.1 ECM-5 Replace Domestic Water Heater (DWH)

A Rheem Ruud Universal (G100-400A-1) natural gas fired non-condensing commercial domestic hot water heater with a capacity of 103 gallons, 80% efficiency, and an input of 399,900 BTU is located in the boiler room of the school. During periods of little or no domestic hot water use, the units must still heat the water within their storage tank. Energy required maintaining the amount of hot water temperature set point with times of zero demand is known as standby losses; replacing this unit with higher efficiency tankless on demand water heater was evaluated.

According to the U.S. Department of Energy, 2.5% of stored capacity is lost every hour during hot water heater standby. This value was applied to the total volume of the existing domestic water heater storage tank to determine the annual standby losses. Proposed efficiency was based on a high efficiency tankless on demand condensing water heater. The new water heater will require some typical installation costs.

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

ECM-5 Replace Domestic Water Heater (DWH)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
20,000	0	0	19,300	17,400	0	17,400	17.4	600	1.1	1.1

Expected Life: 21 years

Lifetime Savings: 0 kWh 405,300 therms $365,400

* Incenive shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

This measure is recommended.

4.5 Lighting/Electrical Systems

The majority of the lighting in the high school is T-8 fluorescent tube fixtures with electronic ballasts and a mixture of incandescent and compact fluorescent lamps. The newly installed T-8 lighting is in the sophomore and senior wings of the school. The auditorium has chandeliers with 12 incandescent lights per fixture and perimeter fixtures with 3 incandescent lights per fixture. The gymnasium has fixtures which are equipped

with 6 fluorescent fixtures in each of them. There are T-12 fluorescent fixtures with magnetic ballasts in the freshman wing, junior wing, woodshop room, and music room. The building exterior utilizes 100 watt PAR fixtures, 32 watt LED spotlights, 175 watt metal halide fixtures, 125 watt incandescent fixtures, 400 watt metal halide fixtures, and 60 watt compact fluorescent fixtures. A comprehensive lighting survey can be found in Appendix B. All exterior lights are either controlled on photocell sensors or on time clocks set for 12 hours.

4.5.1 ECM-6 Install Network Controller

Approximately 150 personal computers are utilized in classrooms, offices, and other areas throughout the building. These computers are left on for the entire day; it was noted during the site visit that the computers had hibernate modes turned off. When computers are not being used, significant energy savings can be realized when the total energy draw is reduced. An evaluation was performed for installing a computer network controller to reduce electrical energy draw from the computer network system when computers are not in use.

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

ECM-6 Install Network Controller

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
2,000	18,000	0	0	2,800	0	2,800	17.4	0	0.7	0.7

Expected Life: 15 years

Lifetime Savings: 270,000 kWh 0 therms $42,000

* No incentives are available for this measure.

This measure is recommended.

4.5.2 ECM-7 Lighting Replacement / Upgrades

The school utilizes some T-12 fluorescent fixtures. Compared to T-8s these bulbs consume more energy and are less efficient. The ballasts are magnetic as well. Each switch and circuit was identified, and the number of fixtures, locations, and existing wattage established (Appendix B). There is an opportunity to reduce consumption by upgrading the lighting fixtures to a super T-8 fixture and all incandescent fixtures to compact fluorescent lamps. The exterior lighting is proposed to be changed from metal halides and incandescent to LED which has a longer life and consumes much less energy. To upgrade the T12 fixtures to super T8's the fixtures need to be re-lamped and re-ballasted and to incandescent replacement only involves changing the bulbs to compact fluorescent bulbs. The exterior lighting would require a full replacement to change to LED fixtures.

Energy savings for this measure were calculated by applying the existing and proposed fixture wattages to estimated times of operation. The difference between energy requirements resulted in a total annual savings of 52,800 kWh with an electrical demand reduction of about 24.2 kW. These calculations are based upon 1 to 1 replacements with the fixtures. They do not take into account lumen output and square footage. A more comprehensive study may be performed to determine correct lighting levels.

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

ECM-7 Lighting Replacement / Upgrades

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
45,000	46,800	24.2	0	9,100	0	9,100	1.8	4,500	4.9	4.5

Expected Life: 15 years

Lifetime Savings: 702,000 kWh 0 therms $136,500

* Incentives shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

This measure is not recommended in lieu of ECM-9.

4.5.3 ECM-8 Install Lighting Controls (Occupancy Sensors)

Review of the comprehensive lighting survey determined that lighting in classrooms and various other spaces are typically operational, regardless of occupancy. Therefore, installing an occupancy sensor in these spaces to turn off lights when the areas are unoccupied was assessed.

This measure recommends installing occupancy sensors for the current lighting system. Using a process similar to that utilized in section 4.5.1, 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 difference between the two values resulted in an annual savings of 29,600 kWh.

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

ECM-8 Install Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
11,000	30,800	0	0	4,800	0	4,800	5.5	1,900	2.3	1.9

Expected Life: 15 years

Lifetime Savings: 462,000 kWh 0 therms $72,000

* Incentives shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

This measure is not recommended in lieu of ECM-9.

4.5.4 ECM-9 Lighting Replacements with Controls (Occupancy Sensors)

This measure is a combination of ECM 4 and ECM 5; recommending to 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 calculated annual savings is 71,500 kWh at a total of $11,700.

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

ECM-9 Lighting Replacements with Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
56,000	65,600	24.2	0	12,000	0	12,000	1.9	6,400	4.7	4.1

Expected Life: 15 years

Lifetime Savings: 984,000 kWh 0 therms $180,000

* Incentives shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

This measure is recommended.

4.6 Plumbing Systems

Faucets, toilets and urinals installed before the 90s consume more water than modern plumbing fixtures. On average faucets installed before the 90s have a flow rate of 3 gallons per minute (gpm), urinals consume approximately 3 gallons per flush (gpf) and toilets typically use 5.5 gpf.

4.6.1 ECM-10 Install Low Flow Plumbing

The school has a mixture of older and newer style fixtures in the restrooms. The older style fixtures consume more water than modern plumbing fixtures. It was determined that there is a combination of 96 water closets with an average water use of 5.5 gpf, 24 urinals with an average of 3.5 gpf and 86 faucets with a flow of 3 gpm. Per the number of occupants, it was estimated that each water closet, urinal and faucet is utilized approximately 4 times per day.

The water savings associated from replacing these fixtures with 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 number of times each fixture is used, gallons per use, and number of fixtures. Replacing the existing plumbing fixtures in the school with 1.28 gpf water closets, 0.5 gpf urinals and 1.5 gpm faucets would save 1,083 KGal annually.

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

ECM-10 Install Low Flow Plumbing

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Water	Total						
$	kWh	kW	kGal	$	$	$		$	Years	Years
99,000	0	0	1,100	1,600	0	1,600	-0.7	0	>20	>20

Expected Life: 20 years

Lifetime Savings: 22,000 kGal 0 therms $32,000

* No incentives are available for this measure.

This measure is not recommended.

4.7 Kitchen Equipment

Cooking equipment for the kitchen within the school is fueled by gas and electricity. The stove and oven are each fueled by natural gas. The dishwasher has an electric booster heater and the freezer and refrigerator are both electric appliances.

4.7.1 ECM-11 Replace Dishwasher Electric Booster Heater to Natural Gas

The school uses a Hobart 13 kW electric hot water booster heater four hours per day for 180 days per year for sanitizing dishes. Utilizing natural gas for the booster heater was assessed.

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

ECM-11 Replace Dishwasher Electric Booster Heater to Natural Gas

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
20,000	6,600	0	-300	1,700	0	1,700	0.2	500	11.8	11.5

Expected Life: 15 years

Lifetime Savings: 99,000 kWh -4,500 therms $25,500

* Incentives shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

This measure is recommended.

5.0 PROJECT INCENTIVES

5.1 Incentives Overview

5.1.1 New Jersey Pay For Performance Program

The school will 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 for qualified energy conservation projects applied to facilities whose demand in any of the preceding 12 months exceeds 100 kW. This average minimum has been waived for buildings owned by local governments or municipalities and non-profit organizations, however. 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). 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).

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

The standard incentive pays $0.10 per square foot, up to a maximum of $50,000, not to exceed 50% of school 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.

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

Electric

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

Gas

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

Incentive cap: 25% of total project cost

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

Electric

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

Gas

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

The table below shows potential incentives available for the Pompton Lakes High School through Pay for Performance program:

	Incentives $		
	Electric	Gas	Total
Incentive #1	$0	$0	$5,856
Incentive #2	$9,921	$70,517	$80,438
Incentive #3	$9,921	$70,517	$80,438
Total All Incentives	**$19,842**	**$141,035**	**$166,732**

The estimated annual savings for the recommended ECM's exceeds the 15% annual savings required by the P4P program. Therefore all three incentives are applicable. See Appendix D

5.1.2 New Jersey Smart Start Program

For this report, some energy conservation measures are applicable to the 2012 Smart Start Incentive Program and associated savings are included. This program provides incentives for pre-approved mechanical and electrical equipment replacements and pre-approved custom measures. The program includes a wide variety of incentives ranging from chillers and boilers, variable frequency drives, unitary HVAC equipment and lighting retrofits. Each incentive must be applied for and approved by the NJBPU (or corresponding utility program) prior to the installation of the equipment. Incentive payments are made to the owner after the equipment is fully installed and paid for.

5.1.3 Direct Install Program

The Direct Install Program targets small and medium sized facilities where the peak electrical demand does not exceed 150 kW 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 significantly reduce the implementation cost of energy conservation projects.

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 a Direct Install participating contractor, a list of which can be found on the New Jersey Clean Energy Website at http://www.njcleanenergy.com. Contractors will coordinate with the applicant to arrange installation of recommended measures identified in a previous energy assessment, such as this document.

Due to the demand exceeding the 150 kW threshold, the Pompton Lakes HS is not eligible for Direct Install incentives.

5.1.4 Energy Savings Improvement Plans (ESIP)

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" to pay for the capital costs of energy improvements to their facilities. This can be done over a maximum term of 15 years. Energy savings obligations 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 (see Appendix E). 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.

6.0 ALTERNATIVE ENERGY SCREENING EVALUATION

6.1 Solar

6.1.1 Photovoltaic Rooftop Solar Power Generation

The school 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 building's roof has sufficient room to install a large solar cell array. However, there is not sufficient room to size a system to meet the demand of the building. For this analysis we will consider a 120 KW system to help reduce usage.

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

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. One SREC credit is equivalent to 1000 kilowatt hours of PV electrical production; these credits can be traded for a period of 15 years from the date of installation. The average SREC value per credit is estimated to be about $60/ SREC per year based on current market data, and this number was utilized in the cash flow for this report.

The available roof area justifies the use of 120 kW PV solar array; where incentives can be applied from a New Jersey SREC program. The system costs for PV installations were derived from contractor budgetary pricing in the state of New Jersey for estimates of total cost of system installation. It should be noted that the cost of installation is currently about $4.00 per watt or $4,000 per kW of installed system, for a 120 kW system. Other cost considerations will also need to be considered. 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 need to be replaced multiple times 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 – 120 kW System

Budgetary Cost	Annual Utility Savings				Total Savings	New Jersey Renewable Energy Incentive*	New Jersey Renewable SREC**	Payback (without incentive)	Payback (with incentives)
	Electricity		Natural Gas	Total					
$	kW	kWh	Therms	$	$	$	$	Years	Years
480,000	120	156,400	0	24,398	24,398	0	10,166	19.7	13.9

** Estimated Solar Renewable Energy Certificate Program (SREC) at $65/1000 kWh

This measure is recommended.

6.1.2 Solar Thermal Hot Water Plant

Active solar thermal systems use solar collectors to gather the sun's energy to heat water, another fluid, or air. An absorber in the collector converts the sun's energy into heat. The heat is then transferred by circulating water, antifreeze, or sometimes air to another location for immediate use or storage for later utilization. Applications for active solar thermal energy include providing hot water, heating swimming pools, space heating, and 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 around the site's latitude, to maximize the amount of radiation collected on a yearly basis.

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

7.0 EPA PORTFOLIO MANAGER

The EPA Portfolio Manager benchmarking tool was used to assess the building's energy performance. Portfolio Manager 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.

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 school 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 Portfolio Manager benchmarking tool are contained in the table below.

Building	Site EUI kBtu/ft^2/yr	Source EUI Btu/ft^2/yr	Energy Star Rating (1-100)
Pompton Lakes High School	130	247	4

The Pompton Lakes High school has a below average Energy Star Score. By implementing the measures discussed in this report, it is expected that the EUI can be reduced. The energy star rating could be so low and well below average due to the poor building envelope. The poor door and window seals in the school cause infiltration. The insulation in the attic was not sufficient enough and is allowing an excess loss of heat from the attic. The C-2 exterior door area had poor seals on each set of doors and is in need of new windows and insulation installed to stop the infiltration. Also, running a high demand on all the HVAC equipment to be turned on all at the same time and inefficient lighting can be a cause of a poor energy star rating. All of these problems in this school all add up to the low score and should be improved by implementing the recommended energy conservation measures.

The Portfolio Manager account can be accessed by entering the username and password shown below at the login screen of the Portfolio Manager website (https://www.energystar.gov/istar/pmpam/). The account has been shared with the NYSERDABENCHMARKING master account.

Username: [redacted]
Password: [redacted]

A full EPA Energy Star Portfolio Manager Report is located in Appendix H. The user name and password for the building's EPA Portfolio Manager Account has been provided by CHA

8.0 CONCLUSIONS & RECOMMENDATIONS

The energy audit conducted by CHA at the Pompton Lakes High School identified potential annual savings of $72,100 may be realized for the recommended ECMs, with a summary of the costs, savings, and paybacks as follows:

ECM-1 Door & Window Seals

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
33,000	0	0	8,800	7,900	0	7,900	0.2	0	4.2	4.2

ECM-2 Add Insulation in Attic

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
4,000	0	0	26,300	23,600	0	23,600	176.2	0	0.2	0.2

ECM-4 Install Direct Digital Controls Schedules (Peak Demand Reduction)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
10,000	0	100	0	6,700	0	6,700	9.1	0	1.5	1.5

ECM-5 Replace Domestic Water Heater (DWH)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
20,000	0	0	19,300	17,400	0	17,400	17.4	600	1.1	1.1

ECM-6 Install Network Controller

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
2,000	18,000	0	0	2,800	0	2,800	17.4	0	0.7	0.7

ECM-9

Lighting Replacements with Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
56,000	65,600	24.2	0	12,000	0	12,000	1.9	6,400	4.7	4.1

ECM-11 Replace Dishwasher Electric Booster Heater to Natural Gas

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
20,000	6,600	0	-300	1,700	0	1,700	0.2	500	11.8	11.5

APPENDIX A

Utility Usage Analysis and List of Alternate Suppliers

Pompton Lakes Board of Education
237 Van Avenue, Pompton Lakes, NJ 07442

Annual Utilities
12-month Summary

Electric		
Annual Usage	828,247	kWh/yr
Annual Cost	129,574	$
Blended Rate	0.156	$/kWh
Consumption Rate	0.139	$/kWh
Demand Rate	6.22	$/kW
Peak Demand	248.6	kW
Min. Demand	153.4	kW
Avg. Demand	194.8	kW
Natural Gas		
Annual Usage	47,867	Therm/year
Annual Cost	43,489	$
Rate	0.909	$/Therm
Water		
Annual Usage	810,000	gallons/yr
Annual Cost	1,235	$
Rate	1.525	$/kgallon

Pompton Lakes Board of Education
237 Van Avenue, Pompton Lakes, NJ 07442

Utility Bills: Account Numbers

Account Number	School Building	Location	Type	Notes
4201154009	Pompton Lakes High School	44 Lakeside Avenue, Pompton Lakes, NJ 07442	Electricity	
6538836305	Pompton Lakes High School	44 Lakeside Avenue, Pompton Lakes, NJ 07442	Natural Gas	
349803	Pompton Lakes High School	44 Lakeside Avenue, Pompton Lakes, NJ 07442	Water	

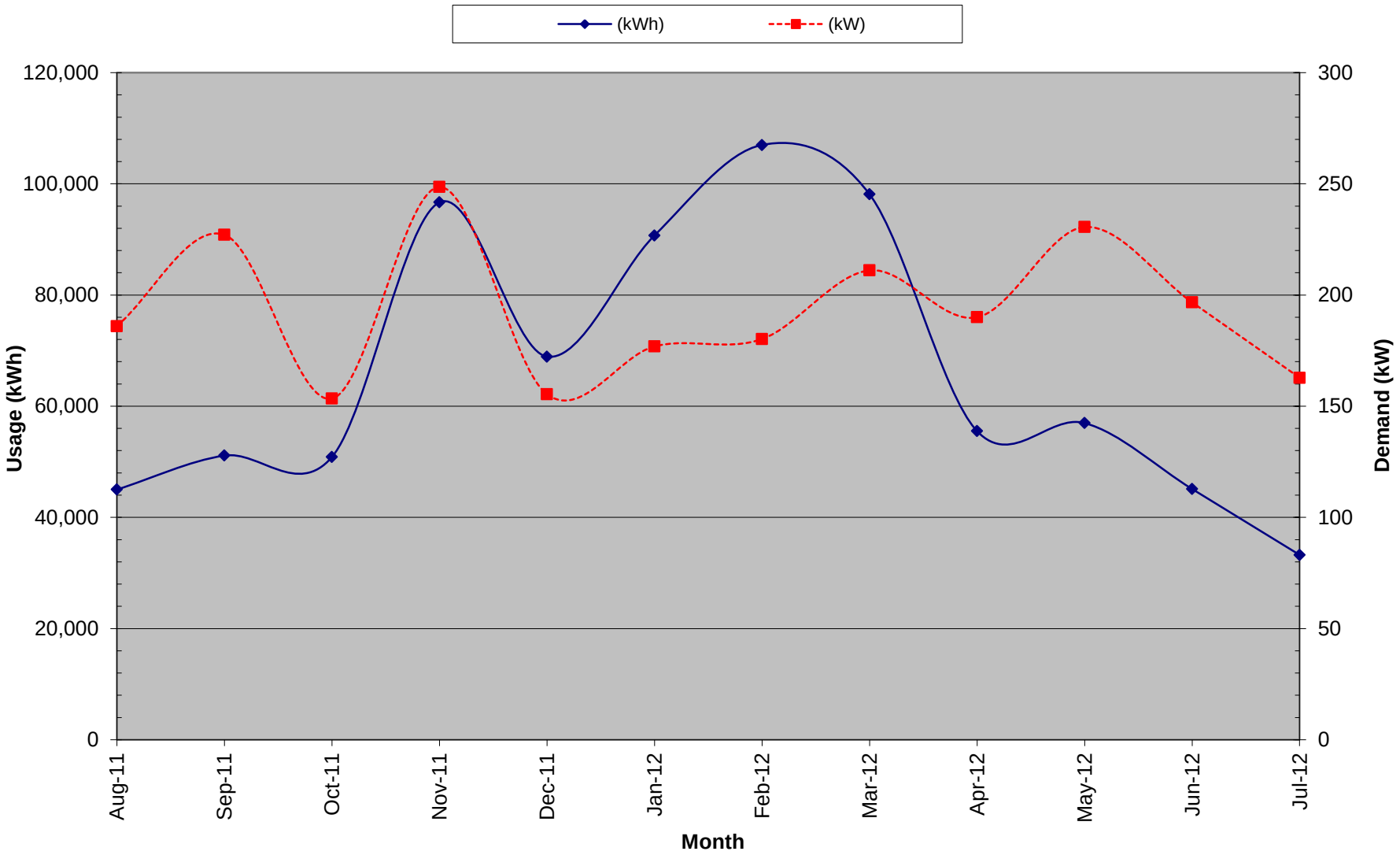
Pompton Lakes Board of Education
237 Van Avenue, Pompton Lakes, NJ 07442

For Service at: **Pompton Lakes High School**
Account No.: 4201154009 **Delivery -** JCP&L
Meter No.: 778009530 **Supplier -** JCP&L
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)**
August-11	45,000	186.00	3,790.29	4,208.85	7,999.14	5,807.80	2,191.34	0.18	0.13	11.78
September-11	51,120	227.10	2,902.78	5,861.36	8,764.14	5,618.51	3,145.63	0.17	0.11	13.85
October-11	50,853	153.40	2,197.17	5,244.76	7,441.93	6,511.01	930.92	0.15	0.13	6.07
November-11	96,678	248.60	5,159.36	11,019.26	16,178.62	15,362.76	815.86	0.17	0.16	3.28
December-11	68,925	155.40	2,802.72	7,692.26	10,494.98	9,626.82	868.16	0.15	0.14	5.59
January-12	90,720	176.90	4,140.95	10,114.38	14,255.33	13,387.16	868.17	0.16	0.15	4.91
February-12	107,000	180.20	4,527.29	11,967.20	16,494.49	15,647.25	847.24	0.15	0.15	4.70
March-12	98,120	211.10	4,092.88	11,104.64	15,197.52	14,339.82	857.70	0.15	0.15	4.06
April-12	55,519	190.00	2,337.99	6,285.64	8,623.63	7,640.41	983.22	0.16	0.14	5.17
May-12	56,968	230.60	2,435.42	6,521.20	8,956.62	7,677.93	1,278.69	0.16	0.13	5.55
June-12	45,108	196.70	2,117.28	5,019.45	7,136.73	5,858.03	1,278.69	0.16	0.13	6.50
July-12	33,247	162.80	1,799.13	3,517.70	5,316.83	4,038.14	1,278.69	0.16	0.12	7.85
August-12	73,989	214.00	2,884.65	7,828.41	10,713.06	9,434.37	1,278.69	0.14	0.13	5.98
Total (All)	**873,247**	**248.60**	**$41,187.91**	**$96,385.11**	**$137,573.02**	**$120,950.00**	**$16,623.01**	**$0.16**	**$0.14**	**$7.17**
Total (last 12-months)	**828,247**	**248.60**	**$37,397.62**	**$92,176.26**	**$129,573.88**	**$115,142.20**	**$14,431.67**	**$0.16**	**$0.14**	**$6.22**
Notes	1	2	3	4	5	6	7	8	9	10

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

Electric Usage - Elementary School

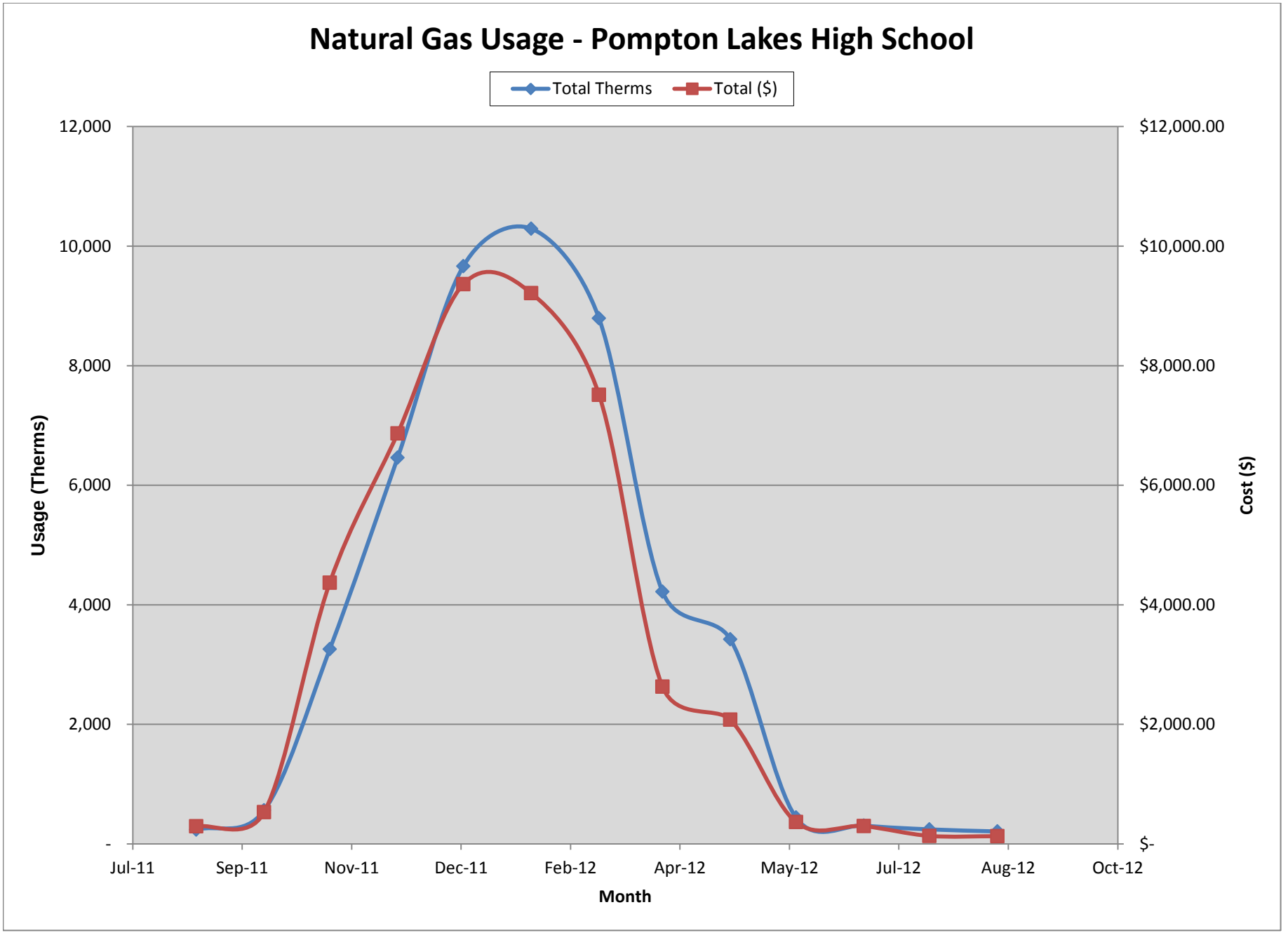


Utility Data -Pompton Lakes High School-44 Lakeside Ave Rev1
Electric Graph

Pompton Lakes Board of Education
237 Van Avenue, Pompton Lakes, NJ 07442

For Service at: **Pompton Lakes High School**
Account No.: 6538836305
Meter No.: 3567967 3229083
Natural Gas Service
Delivery - **PSE&G**
Supplier - **PSE&G**

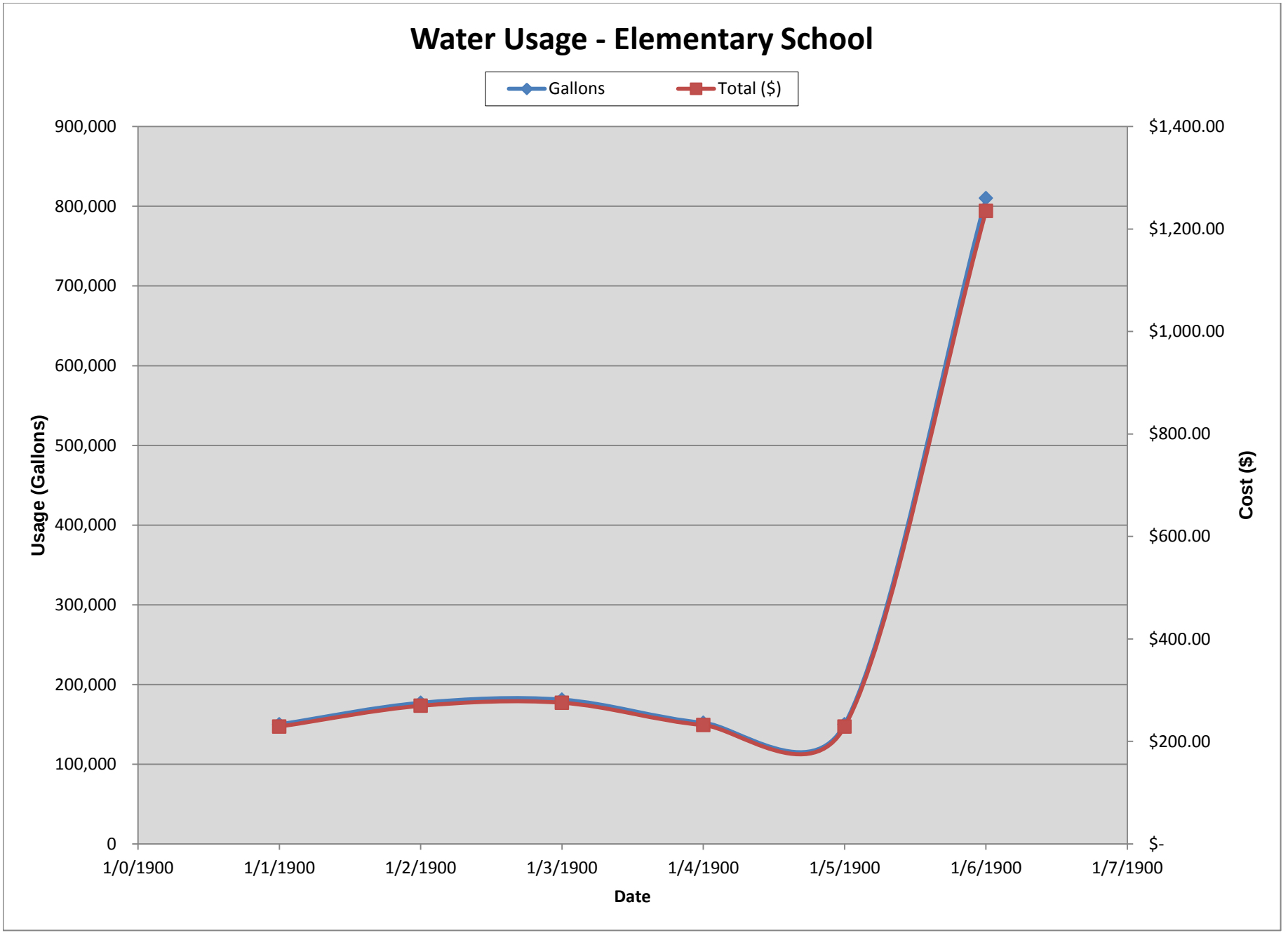
Month	Total Therms	Delivery ($)	Supply ($)	Total ($)	Blended Rate $/Therm
Aug-11	237	$ 134	$ 158.78	$ 292.80	$ 1.24
Sep-11	561	$ 181	$ 348.48	$ 529.67	$ 0.94
Oct-11	3,257	$ 2,379	$ 1,991.28	$ 4,370.55	$ 1.34
Nov-11	6,461	$ 2,985	$ 3,881.65	$ 6,866.52	$ 1.06
Dec-11	9,665	$ 3,590	$ 5,772.02	$ 9,362.48	$ 0.97
Jan-12	10,293	$ 3,320	$ 5,894.56	$ 9,214.35	$ 0.90
Feb-12	8,793	$ 2,968	$ 4,545.36	$ 7,513.72	$ 0.85
Mar-12	4,218	$ 551	$ 2,077.71	$ 2,629.16	$ 0.62
Apr-12	3,423	$ 475	$ 1,601.65	$ 2,076.45	$ 0.61
May-12	439	$ 162	$ 203.20	$ 364.95	$ 0.83
Jun-12	306	$ 143	$ 154.97	$ 297.91	$ 0.97
Jul-12	243	$ 134		$ 133.92	$ 0.55
Aug-12	208	$ 129		$ 129.02	$ 0.62
Total	**48,104**	**$ 17,152**	**$ 26,629.66**	**$ 43,781.50**	**$ 0.91**
Total (12-months)	**47,867**	**$ 17,018**	**$ 26,470.88**	**$ 43,488.70**	**$ 0.91**


Natural Gas Usage - Pompton Lakes High School
Total Therms
Total ($)
12,000
10,000
8,000
6,000
4,000
2,000
-
$12,000.00
$10,000.00
$8,000.00
$6,000.00
$4,000.00
$2,000.00
$-
Usage (Therms)
Cost ($)
Jul-11
Sep-11
Nov-11
Dec-11
Feb-12
Apr-12
May-12
Jul-12
Aug-12
Oct-12
Month

Pompton Lakes Board of Education
237 Van Avenue, Pompton Lakes, NJ 07442

For Service at: **Pompton Lakes High School**
Account No.: 349803
Water
Delivery -
Supplier -

Month	Gallons	Total ($)	$/kGal
Oct-11	150,000	$ 229.00	$ 1.53
Jan-12	177,000	$ 269.50	$ 1.52
Apr-12	181,000	$ 275.50	$ 1.52
Jul-12	152,000	$ 232.00	$ 1.53
Oct-12	150,000	$ 229.00	$ 1.53
Total	**810,000**	**$ 1,235.00**	**$ 1.52**


Water Usage - Elementary School
Gallons
Total ($)
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Usage (Gallons)
$1,400.00
$1,200.00
$1,000.00
$800.00
$600.00
$400.00
$200.00
$-
Cost ($)
1/0/1900
1/1/1900
1/2/1900
1/3/1900
1/4/1900
1/5/1900
1/6/1900
1/7/1900
Date

JCP&L SERVICE TERRITORY
Last Updated: 10/24/12

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

Supplier	Telephone & Web Site	*Customer Class
AEP Energy, Inc. 309 Fellowship Road, Fl.2 Mount Laurel, NJ 08054	(866) 258-3782 www.aepenergy.com	**C/I** **ACTIVE**
Alpha Gas and Electric, LLC 641 5th Street Lakewood, NJ 08701	(855) 553-6374 www.alphagasandelectric.com	**R/C** **ACTIVE**
Ambit Northeast, LLC 103 Carnegie Center Suite 300 Princeton, NJ 08540	(877) 30-AMBIT (877) 302-6248 www.ambitenergy.com	**R/C** **ACTIVE**
AP Gas & Electric, LLC 10 North Park Place, Suite 420 Morristown, NJ 07960	(855) 544-4895 www.apge.com	**R/C/I** **ACTIVE**
Astral Energy LLC 16 Tyson Place Bergenfield, NJ 07621	(201) 384-5552 www.astralenergyllc.com	**R/C/I** **ACTIVE**
BBPC, LLC d/b/a Great Eastern Energy 116 Village Blvd. Suite 200 Princeton, NJ 08540	(888) 651-4121 www.greateasternenergy.com	**C/I** **ACTIVE**
Champion Energy Services, LLC 72 Avenue L Newark, NJ 07105	(877) 653-5090 www.championenergyservices.com	**R/C/I** **ACTIVE**
Choice Energy, LLC 4257 US Highway 9, Suite 6C Freehold, NJ 07728	888-565-4490 www.4choiceenergy.com	**R/C** **ACTIVE**
Clearview Electric, Inc. 505 Park Drive Woodbury, NJ 08096	(888) CLR-VIEW (800) 746-4702 www.clearviewenergy.com	**R/C/I** **ACTIVE**
Commerce Energy, Inc. 7 Cedar Terrace Ramsey, NJ 07446	1-866-587-8674 www.commerceenergy.com	**R** **ACTIVE**

ConEdison Solutions Cherry Tree Corporate Center 535 State Highway Suite 180 Cherry Hill, NJ 08002	(888) 665-0955 www.conedsolutions.com	**C/I** **ACTIVE**
Constellation NewEnergy, Inc. 900A Lake Street, Suite 2 Ramsey, NJ 07446	(866) 237-7693 www.constellation.com	**R/C/I** **ACTIVE**
Constellation Energy 900A Lake Street, Suite 2 Ramsey, NJ 07446	(877) 997-9995 www.constellation.com	**R** **ACTIVE**
Direct Energy Business, LLC 120 Wood Avenue Suite 611 Iselin, NJ 08830	(888) 925-9115 www.directenergybusiness.com	**C/I** **ACTIVE**
Direct Energy Services, LLC 120 Wood Avenue Suite 611 Iselin, NJ 08830	(866) 547-2722 www.directenergy.com	**C/I** **ACTIVE**
Discount Energy Group, LLC 811 Church Road, Suite 149 Cherry Hill, NJ 08002	(800) 282-3331 www.discountenergygroup.com	**R/C** **ACTIVE**
Dominion Retail, Inc. **d/b/a Dominion Energy Solutions** 395 Route 70 West, Suite 125 Lakewood, NJ 08701	(866) 275-4240 www.dom.com/products	**R/C** **ACTIVE**
DTE Energy Supply, Inc. One Gateway Center, Suite 2600 Newark, NJ 07102	(877) 332-2450 www.dtesupply.com	**C/I** **ACTIVE**
Energy Plus Holdings LLC 309 Fellowship Road East Gate Center, Suite 200 Mt. Laurel, NJ 08054	(877) 866-9193 www.energypluscompany.com	**R/C** **ACTIVE**
Energy.me Midwest LLC 90 Washington Blvd Bedminster, NJ 07921	(855) 243-7270 www.energy.me	**R/C/I** **ACTIVE**

Ethical Electric Benefit Co. d/b/a Ethical Electric 100 Overlook Center, 2nd Fl. Princeton, NJ 08540	(888) 444-9452 www.ethicalelectric.com	**R/C** **ACTIVE**
FirstEnergy Solutions Corp. 300 Madison Avenue Morristown, NJ 07962	(800) 977-0500 www.fes.com	**C/I** **ACTIVE**
Gateway Energy Services Corp. 44 Whispering Pines Lane Lakewood, NJ 08701	(800) 805-8586 www.gesc.com	**R/C/I** **ACTIVE**
GDF SUEZ Energy Resources NA, Inc. 333 Thornall Street Sixth Floor Edison, NJ 08819	(866) 999-8374 www.gdfsuezenergyresources.com	**C/I** **ACTIVE**
Glacial Energy of New Jersey, Inc. 75 Route 15 Building E Lafayette, NJ 07848	(888) 452-2425 www.glacialenergy.com	**C/I** **ACTIVE**
Green Mountain Energy Company 211 Carnegie Center Drive Princeton, NJ 08540	(866) 767-5818 www.greenmountain.com/commercial-home	**C/I** **ACTIVE**
Hess Corporation 1 Hess Plaza Woodbridge, NJ 07095	(800) 437-7872 www.hess.com	**C/I** **ACTIVE**
HIKO Energy, LLC 655 Suffern Road Teaneck, NJ 07666	(888) 264-4908 www.hikoenergy.com	**R/C** **ACTIVE**
HOP Energy, LLC d/b/a Metro Energy, HOP Fleet Fueling, HOP Energy Fleet Fueling 1011 Hudson Avenue Ridgefield, NJ 07657	(877) 390-7155 www.hopenergy.com	**R/C/I** **ACTIVE**
IDT Energy, Inc. 550 Broad Street Newark, NJ 07102	(973) 438-4380 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**
Integrys Energy Services, Inc. 99 Wood Ave, South, Suite 802 Iselin, NJ 08830	(877) 763-9977 www.integrysenergy.com	**C/I** **ACTIVE**
Liberty Power Delaware, LLC 3000 Atrium Way Suite 273 Mt. Laurel, NJ 08054	(866) 769-3799 www.libertypowercorp.com	**R/C/I** **ACTIVE**
Liberty Power Holdings, LLC 3000 Atrium Way Suite 273 Mt. Laurel, NJ 08054	(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**
NATGASCO, Inc. 532 Freeman St. Orange, NJ 07050	(973) 678-1800 x. 251 www.supremeenergyinc.com	**R/C** **ACTIVE**
NextEra Energy Services New Jersey, LLC 651 Jernee Mill Road Sayreville, NJ 08872	(877) 528-2890 Commercial (800) 882-1276 Residential www.nexteraenergyservices.com	**R/C/I** **ACTIVE**
NJ Gas & Electric 1 Bridge Plaza fl.2 Fort Lee, NJ 07024	(866) 568-0290 www.NJGandE.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**
North American Power and Gas, LLC 222 Ridgedale Ave. Cedar Knolls, NJ 07927	(888) 313-9086 www.napower.com	**R/C/I** **ACTIVE**

Palmco Power NJ, LLC One Greentree Centre 10,000 Lincoln Drive East, Suite 201 Marlton, NJ 08053	(877) 726-5862 www.PalmcoEnergy.com	**R/C/I** **ACTIVE**
Pepco Energy Services, Inc. 112 Main St. Lebanon, NJ 08833	(800) ENERGY-9 (363-7499) www.pepco-services.com	**R/C** **ACTIVE**
Plymouth Rock Energy, LLC 338 Maitland Avenue Teaneck, NJ 07666	(855) 32-POWER (76937) www.plymouthenergy.com	**R/C/I** **ACTIVE**
PPL EnergyPlus, LLC 811 Church Road Cherry Hill, NJ 08002	(800) 281-2000 www.pplenergyplus.com	**C/I** **ACTIVE**
Public Power & Utility of New Jersey, LLC 39 Old Ridgebury Rd. Suite 14 Danbury, CT 06810	(888) 354-4415 www.ppandu.com	**R/C/I** **ACTIVE**
Reliant Energy 211 Carnegie Center Princeton, NJ 08540	(877) 297-3795 (877) 297-3780 www.reliant.com/pjm	**R/C/I** **ACTIVE**
ResCom Energy LLC 18C Wave Crest Ave. Winfield Park, NJ 07036	(888) 238-4041 http://rescomenergy.com	**R/C/I** **ACTIVE**
Respond Power LLC 10 Regency CT Lakewood, NJ 08701	(877) 973-7763 www.respondpower.com	**R/C/I** **ACTIVE**
South Jersey Energy Company 1 South Jersey Plaza Route 54 Folsom, NJ 08037	(800) 800-266-6020 www.southjerseyenergy.com	**C/I** **ACTIVE**
Sperian Energy Corp. 1200 Route 22 East, Suite 2000 Bridgewater, NJ 08807	(888) 682-8082	**R/C/I** **ACTIVE**
Starion Energy PA Inc. 101 Warburton Avenue Hawthorne, NJ 07506	(800) 600-3040 www.starionenergy.com	**R/C/I** **ACTIVE**

Stream Energy 309 Fellowship Road Suite 200 Mt. Laurel, NJ 08054	(877) 369-8150 www.streamenergy.net	**R** **ACTIVE**
UGI Energy Services, Inc. **d/b/a GASMARK** 224 Strawbridge Drive Suite 107 Moorestown, NJ 08057	(856) 273-9995 www.ugienergyservices.com	**C/I** **ACTIVE**
Verde Energy USA, Inc. 50 East Palisades Avenue Englewood, NJ 07631	(800) 388-3862 www.lowcostpower.com	**R/C/I** **ACTIVE**
Viridian Energy 2001 Route 46 Waterview Plaza Suite 310 Parsippany, NJ 07054	(866) 663-2508 www.viridian.com	**R/C/I** **ACTIVE**
Xoom Energy New Jersey, LLC 744 Broad Street Newark, NJ 07102	(888)997-8979 www.xoomenergy.com	**R/C/I** **ACTIVE**
YEP Energy 89 Headquarters Plaza North #1463 Morristown, NJ 07960	(855) 363-7736 www.yepenergyNJ.com	**R/C/I** **ACTIVE**
Your Energy Holdings, LLC One International Boulevard Suite 400 Mahwah, NJ 07495-0400	(855) 732-2493 www.thisisyourenergy.com	**R/C/I** **ACTIVE**

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

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

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

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

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

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

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

Back to main supplier information page

APPENDIX B

Equipment Inventory

Pompton Lakes High School
CHA Project#24698
44 Lakeside Aveenue
Pompton Lakes, NJ 07442

Description	QTY	Manufacturer Name	Model No.	Serial No.	Equipment Type / Utility	Capacity/Size /Efficiency	Location	Areas/Equipment Served
AC-1	1	AAON	RN-040-8-EB09	N/A	HVAC/DX Cooling	40 tons / 13,500 CFM	Rooftop	Auditorium
AC-2	1	AAON	UFFF-D00-FEH-0BA-0D0D0BE-00	N/A	HVAC/DX Cooling	40 tons / 13,000 CFM	Rooftop	Gymnasium
UV	21	Trane	VUVE-075	N/A	HVAC/HW Heating	1/4 HP / 55 MBH / 750 CFM	Classrooms	Classrooms
UV-1-DX	2	Trane	VUVE-075	N/A	HVAC/DX Cooling, HW Heating	1/4 HP / 55 MBH / 750 CFM / 2.5 Ton Coil	Classrooms	Classrooms
UV-2	9	Trane	VUVE-100	N/A	HVAC/HW Heating	1/4 HP / 55 MBH / 1000 CFM	Classrooms	Classrooms
UV-3	1	Trane	VUVE-125	N/A	HVAC/HW Heating	2 at 1/10 HP / 55 MBH / 1250 CFM	Classrooms	Classrooms
UV-4	3	Trane	VUVE-150	N/A	HVAC/HW Heating	2 at 1/10 HP / 65 MBH / 1500 CFM	Classrooms	Classrooms
UV-4A	2	Trane	HUVC-150	N/A	HVAC/HW Heating	1/4 HP / 99 MBH / 1500 CFM	Classrooms	Classrooms
UV-4B	1	Trane	HUVC-150	N/A	HVAC/HW Heating	1/4 HP / 65 MBH / 1500 CFM	Classrooms	Classrooms
UV-4C-DX	1	Trane	HUVC-150	N/A	HVAC/DX Cooling, HW Heating	1/4 HP / 65 MBH / 750 CFM / 5 Ton Coil	Classrooms	Classrooms
CUH-1	1	Sterling	RW-1120	N/A	HVAC/HW Heating	430/380 CFM / 1/10 HP	Classrooms	Classrooms
CUH-2	1	Sterling	F-1010	N/A	HVAC/HW Heating	430/380 CFM / 1/10 HP	Classrooms	Classrooms
C-1	1	Sterling	832	N/A	HVAC/HW Heating	10.9 MBH 170°F	Classrooms	Classrooms
C-2	1	Sterling	Recessed	N/A	HVAC/HW Heating	6.9 MBH 170°F	Classrooms	Classrooms
C-3	1	Sterling	832	N/A	HVAC/HW Heating	11.8 MBH 170°F	Classrooms	Classrooms
C-4	1	Sterling	632	N/A	HVAC/HW Heating	5.3 MBH 170°F	Classrooms	Classrooms
C-5	1	Sterling	632	N/A	HVAC/HW Heating	9.4 MBH 170°F	Classrooms	Classrooms
C-6	1	Sterling	430	N/A	HVAC/HW Heating	5.8 MBH 170°F	Classrooms	Classrooms
C-7	1	Sterling	630	N/A	HVAC/HW Heating	10.1 MBH 170°F	Classrooms	Classrooms
FTR-1	1	Sterling	N/A	N/A	HVAC/HW Heating	1200 BTU / 170°F	Classrooms	Classrooms
FTR-2	1	Sterling	N/A	N/A	HVAC/HW Heating	2250 BTU / 170°F	Classrooms	Classrooms
FTR-3	1	Sterling	N/A	N/A	HVAC/HW Heating	1040 BTU / 170°F	Classrooms	Classrooms
P-1	1	B & G	Series 15104E	N/A	HVAC/Electric	20 HP / 500 GPM / 1750 RPM / VFD by ATC	Boiler Room	Building
P-2	1	B & G	Series 15104E	N/A	HVAC/Electric	20 HP / 500 GPM / 1750 RPM / VFD by ATC-standby	Boiler Room	Building
Condensing Unit	1	Mitsubishi Electric	MUY-D30NA	1002122T	HVAC/DX Cooling	208/230 volts 1 phase / fan motor: F.L.A. 0.93, Output: 77W / Compressor: R.L.A. 16, L.R.A. 20	Art Rooftop	N/A
Condensing Unit	1	Mitsubishi Electric	MUY-D30NA	1002124T	HVAC/DX Cooling	208/230 volts 1 phase / fan motor: F.L.A. 0.93, Output: 77W / Compressor: R.L.A. 16, L.R.A. 20	Art Rooftop	N/A
RTU	1	Lennox Industries	CHP20-413-1Y	5699C04385	HVAC/Dx Cooling, Electric Heating	Blower Motor: 1/3 / Condensor Fan: 1/6 / 208/230 V	Tech Room Rooftop	N/A
B-1, B-2, B-3, B-4	4	Aerco Benchmark 2.0	N/A	N/A	HVAC/NG HW Heating	N/A	Boiler Room	Building
Air Compressor	1	Ingersoll Rand	N/A	N/A	HVAC Controls/Electric	3 phase 208v	Boiler Room	Building
DWH-1	1	Rheem-Ruud	G100-400A-1	URNG0512G00559	HVAC/HW Heating/NG	Input: 399,900 BTUH / Capacity: 100 gal / Eff: 80%	Boiler Room	Building
Cartidge Circulator	4	Taco	007-SFS	N/A	HW Heating	1/25 HP / 3250 RPM / Max Water Temp. 230 °F	Boiler Room	Building
Booster Heater	1	Hobart	AM14T	23-1066-003	HW Heating / Kitchen	Capacity: 13 kW / 3 phase	Kitchen	Dishwasher
Split Type A/C	1	Sanyo	KMS1272	86612	DX Cooling	Source: 230/208V 1 Phase / Motor: 0.15/0.17A	Computer Room	Computer Room
Evaporating Unit	1	Mitsubishi Electric	MSY-D30NA	2000162	DX Cooling	Source: 230/208V 1 phase / Fan Motor: F.L.A. 0.76 Outout: 56W	Art Room	Art Room
Unit Ventilators	2	McQuay International	AD8CCLEAA261615000	79G0976300	HVAC/HW Heating	Indoor Fan Motor: 3.1 F.L.A., 1/4 HP / Outdoor Fan Motor: 6.8 F.L.P., 3/4 HP	Weight Room	Weight Room
Unit Ventilators	1	McQuay International	AD8CCLEAA261615000	79G0976300	HVAC/HW Heating	Indoor Fan Motor: 3.1 F.L.A., 1/4 HP / Outdoor Fan Motor: 6.8 F.L.P., 3/4 HP	Tech Room	Tech Room

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School
CHA Project No. 24698
Existing Lighting

Cost of Electric **$0.156** **$/kWh**
$6.15 **$/kW**

			EXISTING CONDITIONS									
	Area Description	**Usage**	**No. of Fixtures**	**Standard Fixture Code**	**NYSERDA Fixture Code**	**Watts per Fixture**	**kW/ Space**	**Exist Control**	**Annual Hours**	**Retrofit Control**	**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" 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 annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)
191	Cafeteria	Cafeteria	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.48	Switch	1600	C-OCC	2,362
13	Boiler Room	Offices	6	S 32 P F 2 (ELE)	F42LL	60	0.36	Switch	2400	OCC	864
247	Supply Room	Storage Area	1	T 40 R F 3 (MAG)	F43SE	136	0.14	Switch	1000	OCC	136
191	Supply Room	Storage	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.12	Switch	1000	OCC	123
13	Stock Room	Areas	9	S 32 P F 2 (ELE)	F42LL	60	0.54	Switch	1000	OCC	540
13	Basement Stairwell	Hallways	3	S 32 P F 2 (ELE)	F42LL	60	0.18	Switch	2280	N/A	410
18	Basement Stairwell	Hallways	2	T 32 R F 4 (ELE)	F44ILL	112	0.22	Switch	2280	N/A	511
254	Room B-5	Classrooms	2	F96T12/HO/ES	F84EHE	414	0.83	Switch	2400	C-OCC	1,987
11	Room B-5	Classrooms	3	S 34 P F 2 (MAG)	F42EE	72	0.22	Switch	2400	C-OCC	518
115	Room B-5	Classrooms	3	W 20 C F 2	F22SS	56	0.17	Switch	2400	C-OCC	403
13	Room B-5	Classrooms	2	S 32 P F 2 (ELE)	F42LL	60	0.12	Switch	2400	C-OCC	288
191	Kitchen	Cafeteria	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.49	Switch	1600	OCC	787
13	Kitchen	Cafeteria	4	S 32 P F 2 (ELE)	F42LL	60	0.24	Switch	1600	OCC	384
78	Kitchen	Cafeteria	2	EP I 100	I100/1	100	0.20	Switch	1600	N/A	320
11	Hallway	Hallways	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2280	N/A	164
115	Storage	Storage	4	W 20 C F 2	F22SS	56	0.22	Switch	1000	OCC	224
115	Storage	Storage	1	W 20 C F 2	F22SS	56	0.06	Switch	1000	OCC	56
11	Storage	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	1000	OCC	72
11	Girl's Locker Room	Locker	8	S 34 P F 2 (MAG)	F42EE	72	0.58	Switch	2800	N/A	1,613
78	Girl's Coaches Office	Offices	1	EP I 100	I100/1	100	0.10	Switch	2400	OCC	240
78	Gymnasium	m	90	EP I 100	I100/1	100	9.00	Switch	2912	C-OCC	26,208
11	Boy's Locker Room	Locker	7	S 34 P F 2 (MAG)	F42EE	72	0.50	Switch	2800	OCC	1,411
78	Boy's Locker Room	Locker	6	EP I 100	I100/1	100	0.60	Switch	2800	OCC	1,680
78	Storage	Areas	5	EP I 100	I100/1	100	0.50	Switch	1000	OCC	500
78	Storage	Areas	1	EP I 100	I100/1	100	0.10	Switch	1000	OCC	100
11	Office	Offices	2	S 34 P F 2 (MAG)	F42EE	72	0.14	Switch	2400	OCC	346
78	Storage	Areas	1	EP I 100	I100/1	100	0.10	Switch	1000	OCC	100
11	Storage	Areas	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	1000	OCC	72
77	Front Vestibule	Hallways	2	I 150	I150/1	150	0.30	Switch	2280	N/A	684
115	Front Bathroom	Bath Room	1	W 20 C F 2	F22SS	56	0.06	Switch	2000	N/A	112
247	Room 102	Classrooms	12	T 40 R F 3 (MAG)	F43SE	136	1.63	Switch	2400	C-OCC	3,917
13	Room 103	Classrooms	16	S 32 P F 2 (ELE)	F42LL	60	0.96	Switch	2400	C-OCC	2,304

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School
CHA Project No. 24698
Existing Lighting

Cost of Electric **$0.156** **$/kWh**
$6.15 **$/kW**

			EXISTING CONDITIONS									
	Area Description	**Usage**	**No. of Fixtures**	**Standard Fixture Code**	**NYSERDA Fixture Code**	**Watts per Fixture**	**kW/ Space**	**Exist Control**	**Annual Hours**	**Retrofit Control**	**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" 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 annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)
11	Nurse	Offices	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2400	OCC	173
247	Nurse	Offices	8	T 40 R F 3 (MAG)	F43SE	136	1.09	Switch	2400	OCC	2,611
115	Nurse	Offices	2	W 20 C F 2	F22SS	56	0.11	Switch	2400	OCC	269
115	Nurse Bathroom	Bath Room	1	W 20 C F 2	F22SS	56	0.06	Switch	2000	N/A	112
11	Floor	Bath Room	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2000	N/A	144
115	Floor	Bath Room	1	W 20 C F 2	F22SS	56	0.06	Switch	2000	N/A	112
11	Room 106	Classrooms	3	S 34 P F 2 (MAG)	F42EE	72	0.22	Switch	2400	C-OCC	518
X5	Library	Classrooms	8	CF42/1	CF42/1	42	0.34	Switch	2400	C-OCC	806
13	Library	Classrooms	12	S 32 P F 2 (ELE)	F42LL	60	0.72	Switch	2400	C-OCC	1,728
13	Library	Classrooms	17	S 32 P F 2 (ELE)	F42LL	60	1.02	Switch	2400	C-OCC	2,448
13	Library	Classrooms	18	S 32 P F 2 (ELE)	F42LL	60	1.08	Switch	2400	C-OCC	2,592
13	Library	Classrooms	24	S 32 P F 2 (ELE)	F42LL	60	1.44	Switch	2400	C-OCC	3,456
13	Library	Classrooms	22	S 32 P F 2 (ELE)	F42LL	60	1.32	Switch	2400	C-OCC	3,168
11	Library Office	Offices	4	S 34 P F 2 (MAG)	F42EE	72	0.29	Switch	2400	OCC	691
139	Library	Classrooms	7	SP 40 I	I40/1	40	0.28	Switch	2400	C-OCC	672
X5	Library	Classrooms	6	CF42/1	CF42/1	42	0.25	Switch	2400	C-OCC	605
54	Library Display Case	Areas	6	S 34 W F 1 (MAG)	F41EE	43	0.26	Switch	1000	OCC	258
139	Library	Classrooms	12	SP 40 I	I40/1	40	0.48	Switch	2400	C-OCC	1,152
18	Fourier	Hallways	1	T 32 R F 4 (ELE)	F44ILL	112	0.11	Switch	2280	OCC	255
18	Room 107	Classrooms	2	T 32 R F 4 (ELE)	F44ILL	112	0.22	Switch	2400	C-OCC	538
5	Room 107	Classrooms	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.18	Switch	2400	C-OCC	432
13	Room 108	Classrooms	3	S 32 P F 2 (ELE)	F42LL	60	0.18	Switch	2400	C-OCC	432
115	Room 108 Bathroom	Bath Room	1	W 20 C F 2	F22SS	56	0.06	Switch	2000	N/A	112
18	Offices	Offices	2	T 32 R F 4 (ELE)	F44ILL	112	0.22	Switch	2400	OCC	538
78	Closet	Areas	1	EP I 100	I100/1	100	0.10	Switch	1000	OCC	100
18	Principal	Offices	2	T 32 R F 4 (ELE)	F44ILL	112	0.22	Switch	2400	OCC	538
13	Offices	Offices	6	S 32 P F 2 (ELE)	F42LL	60	0.36	Switch	2400	OCC	864
11	Room 109	Classrooms	24	S 34 P F 2 (MAG)	F42EE	72	1.73	Switch	2400	C-OCC	4,147
11	Girl's Bathroom 1st Floor	Bath Room	3	S 34 P F 2 (MAG)	F42EE	72	0.22	Switch	2000	N/A	432
78	Auditorium	Auditorium	48	EP I 100	I100/1	100	4.80	Switch	1000	C-OCC	4,800
78	Auditorium	Auditorium	24	EP I 100	I100/1	100	2.40	Switch	1000	C-OCC	2,400

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			EXISTING CONDITIONS									
	Area Description	**Usage**	**No. of Fixtures**	**Standard Fixture Code**	**NYSERDA Fixture Code**	**Watts per Fixture**	**kW/ Space**	**Exist Control**	**Annual Hours**	**Retrofit Control**	**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" 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 annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)
89	Auditorium	Auditorium	18	CF 13 2 LAMP	CFQ13/2-L	28	0.50	Switch	1000	C-OCC	504
11	Room 112	Offices	30	S 34 P F 2 (MAG)	F42EE	72	2.16	Switch	2400	C-OCC	5,184
11	Office	Offices	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2400	OCC	173
11	Office	Offices	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2400	OCC	173
11	Office	Offices	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2400	OCC	173
191	Basement Closet	Storage Area	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.25	Switch	1000	OCC	246
11	Basement Closet	Storage Area	2	S 34 P F 2 (MAG)	F42EE	72	0.14	Switch	1000	OCC	144
191	Basement Closet	Storage Area	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.25	Switch	1000	OCC	246
18	Room 114	Classrooms	12	T 32 R F 4 (ELE)	F44ILL	112	1.34	Switch	2400	C-OCC	3,226
142LED	Room 113	Classrooms	6	MH 100	MH100/1	128	0.77	Switch	2400	C-OCC	1,843
11	Room 115	Classrooms	14	S 34 P F 2 (MAG)	F42EE	72	1.01	Switch	2400	C-OCC	2,419
11	Room 115	Classrooms	14	S 34 P F 2 (MAG)	F42EE	72	1.01	Switch	2400	C-OCC	2,419
11	Room 115	Classrooms	14	S 34 P F 2 (MAG)	F42EE	72	1.01	Switch	2400	C-OCC	2,419
247	Room 117	Classrooms	21	T 40 R F 3 (MAG)	F43SE	136	2.86	Switch	2400	C-OCC	6,854
247	Room 117	Classrooms	7	T 40 R F 3 (MAG)	F43SE	136	0.95	Switch	2400	C-OCC	2,285
247	Room 117	Classrooms	4	T 40 R F 3 (MAG)	F43SE	136	0.54	Switch	2400	C-OCC	1,306
247	Room 117	Classrooms	7	T 40 R F 3 (MAG)	F43SE	136	0.95	Switch	2400	C-OCC	2,285
247	Room 117	Classrooms	2	T 40 R F 3 (MAG)	F43SE	136	0.27	Switch	2400	C-OCC	653
89	Hallways 2nd Floor	Hallways	18	CF 13 2 LAMP	CFQ13/2-L	28	0.50	Switch	2280	N/A	1,149
201	Room 211	Classrooms	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	Switch	2400	C-OCC	3,240
201	Room 211 - Office	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	Switch	2400	OCC	864
201	Room 209	Classrooms	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	Switch	2400	C-OCC	3,240
201	Room 208	Classrooms	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.08	Switch	2400	C-OCC	2,592
11	Girl's Bathroom 2nd Floor	Bath Room	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2000	N/A	144
13	Room 206	Classrooms	12	S 32 P F 2 (ELE)	F42LL	60	0.72	Switch	2400	C-OCC	1,728
13	Room 207	Classrooms	16	S 32 P F 2 (ELE)	F42LL	60	0.96	Switch	2400	C-OCC	2,304
11	Boy's Bathroom 2nd Floor	Bath Room	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2000	N/A	144
115	Boy's Bathroom 2nd Floor	Bath Room	1	W 20 C F 2	F22SS	56	0.06	Switch	2000	N/A	112
201	Room 205	Classrooms	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.35	Switch	2400	C-OCC	3,240
11	Room 205 - Office	Offices	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2400	OCC	173
13	Room 204	Classrooms	8	S 32 P F 2 (ELE)	F42LL	60	0.48	Switch	2400	C-OCC	1,152
13	Room 202	Classrooms	12	S 32 P F 2 (ELE)	F42LL	60	0.72	Switch	2400	C-OCC	1,728
78	Room 202 - Stage	Auditorium	1	EP I 100	I100/1	100	0.10	Switch	1000	C-OCC	100
115	Room 202 - Closet	Storage Area	1	W 20 C F 2	F22SS	56	0.06	Switch	1000	OCC	56
115	Room 202 - Closet	Storage Area	1	W 20 C F 2	F22SS	56	0.06	Switch	1000	OCC	56
13	Room 203	Classrooms	8	S 32 P F 2 (ELE)	F42LL	60	0.48	Switch	2400	C-OCC	1,152
13	Room 201	Classrooms	12	S 32 P F 2 (ELE)	F42LL	60	0.72	Switch	2400	C-OCC	1,728

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			EXISTING CONDITIONS									
	Area Description	**Usage**	**No. of Fixtures**	**Standard Fixture Code**	**NYSERDA Fixture Code**	**Watts per Fixture**	**kW/ Space**	**Exist Control**	**Annual Hours**	**Retrofit Control**	**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" 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 annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)
13	Storage	Storage Area	1	S 32 P F 2 (ELE)	F42LL	60	0.06	Switch	1000	OCC	60
115	Stair Case	Hallways	1	W 20 C F 2	F22SS	56	0.06	Switch	2280	N/A	128
208	Stair Case	Hallways	1	SP 26 R CF 2	CFQ25/2	66	0.07	Switch	2280	N/A	150
18	Stair Case	Hallways	4	T 32 R F 4 (ELE)	F44ILL	112	0.45	Switch	2280	N/A	1,021
6	Math Office	Offices	2	T 34 R F 4 (MAG)	F44EE	144	0.29	Switch	2400	OCC	691
78	Attic	Storage Area	15	EP I 100	I100/1	100	1.50	Switch	1000	N/A	1,500
164	Exit Signs	Hallways	9	X 7.0 W I 2	EI10/2	20	0.18	Switch	2280	N/A	410
54	Room 27	Classrooms	35	S 34 W F 1 (MAG)	F41EE	43	1.51	Switch	2400	C-OCC	3,612
54	Room 28	Classrooms	35	S 34 W F 1 (MAG)	F41EE	43	1.51	Switch	2400	C-OCC	3,612
11	Room 25A	Classrooms	6	S 34 P F 2 (MAG)	F42EE	72	0.43	Switch	2400	C-OCC	1,037
54	Room 26	Classrooms	35	S 34 W F 1 (MAG)	F41EE	43	1.51	Switch	2400	C-OCC	3,612
78	Girl's Bathroom	Bath Room	4	EP I 100	I100/1	100	0.40	Switch	2000	N/A	800
78	Maintenance Closet	Storage Area	1	EP I 100	I100/1	100	0.10	Switch	1000	OCC	100
78	Boys Bathroom	Bath Room	1	EP I 100	I100/1	100	0.10	Switch	2000	N/A	200
11	Boys Bathroom	Bath Room	2	S 34 P F 2 (MAG)	F42EE	72	0.14	Switch	2000	N/A	288
54	Room 25	Classrooms	30	S 34 W F 1 (MAG)	F41EE	43	1.29	Switch	2400	C-OCC	3,096
42	Room 25	Classrooms	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.16	Switch	2400	C-OCC	384
54	Room 24	Classrooms	32	S 34 W F 1 (MAG)	F41EE	43	1.38	Switch	2400	C-OCC	3,302
42	Room 24	Classrooms	3	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.10	Switch	2400	C-OCC	230
54	Room 32	Classrooms	32	S 34 W F 1 (MAG)	F41EE	43	1.38	Switch	2400	C-OCC	3,302
42	Room 32	Classrooms	3	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.10	Switch	2400	C-OCC	230
54	Room 22	Classrooms	30	S 34 W F 1 (MAG)	F41EE	43	1.29	Switch	2400	C-OCC	3,096
42	Room 22	Classrooms	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.16	Switch	2400	C-OCC	384
54	Room 20	Classrooms	33	S 34 W F 1 (MAG)	F41EE	43	1.42	Switch	2400	C-OCC	3,406
42	Room 20	Classrooms	2	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.06	Switch	2400	C-OCC	154
54	Room 21	Classrooms	28	S 34 W F 1 (MAG)	F41EE	43	1.20	Switch	2400	C-OCC	2,890
42	Room 21	Classrooms	7	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.22	Switch	2400	C-OCC	538
11	Hallways	Hallways	13	S 34 P F 2 (MAG)	F42EE	72	0.94	Switch	2280	N/A	2,134
164	Exit Signs	Hallways	2	X 7.0 W I 2	EI10/2	20	0.04	Switch	2280	N/A	91
11	Stairways	Hallways	3	S 34 P F 2 (MAG)	F42EE	72	0.22	Switch	2280	N/A	492
18	Stairways	Hallways	1	T 32 R F 4 (ELE)	F44ILL	112	0.11	Switch	2280	N/A	255
54	Room 11	Classrooms	31	S 34 W F 1 (MAG)	F41EE	43	1.33	Switch	2400	C-OCC	3,199
42	Room 11	Classrooms	4	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.13	Switch	2400	C-OCC	307
54	Room 10	Classrooms	32	S 34 W F 1 (MAG)	F41EE	43	1.38	Switch	2400	C-OCC	3,302
42	Room 10	Classrooms	3	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.10	Switch	2400	C-OCC	230
164	Exit Signs	Hallways	2	X 7.0 W I 2	EI10/2	20	0.04	Switch	2280	N/A	91

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School
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	Area Description	**Usage**	**No. of Fixtures**	**Standard Fixture Code**	**NYSERDA Fixture Code**	**Watts per Fixture**	**kW/ Space**	**Exist Control**	**Annual Hours**	**Retrofit Control**	**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" 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 annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)
11	Hallway	Hallways	14	S 34 P F 2 (MAG)	F42EE	72	1.01	Switch	2280	N/A	2,298
54	Room 12	Classrooms	33	S 34 W F 1 (MAG)	F41EE	43	1.42	Switch	2400	C-OCC	3,406
42	Room 12	Classrooms	2	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.06	Switch	2400	C-OCC	154
54	Room 13	Classrooms	23	S 34 W F 1 (MAG)	F41EE	43	0.99	Switch	2400	C-OCC	2,374
42	Room 13	Classrooms	12	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.38	Switch	2400	C-OCC	922
54	Room 14	Classrooms	29	S 34 W F 1 (MAG)	F41EE	43	1.25	Switch	2400	C-OCC	2,993
42	Room 14	Classrooms	6	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.19	Switch	2400	C-OCC	461
54	Room 15	Classrooms	34	S 34 W F 1 (MAG)	F41EE	43	1.46	Switch	2400	C-OCC	3,509
11	Maintenance Closet	Storage Area	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	1000	C-OCC	72
78	Boy's Bathroom	Bath Room	4	EP I 100	I100/1	100	0.40	Switch	2000	N/A	800
54	Room 16	Classrooms	30	S 34 W F 1 (MAG)	F41EE	43	1.29	Switch	2400	C-OCC	3,096
42	Room 16	Classrooms	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.16	Switch	2400	C-OCC	384
54	Room 18	Classrooms	30	S 34 W F 1 (MAG)	F41EE	43	1.29	Switch	2400	C-OCC	3,096
42	Room 18	Classrooms	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.16	Switch	2400	C-OCC	384
11	Faculty Room	Offices	4	S 34 P F 2 (MAG)	F42EE	72	0.29	Switch	2400	OCC	691
78	Faculty Room	Offices	1	EP I 100	I100/1	100	0.10	Switch	2400	OCC	240
11	Men's Bathroom	Bath Room	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2000	N/A	144
11	Men's Bathroom	Bath Room	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2000	N/A	144
11	Women's Bathroom	Bath Room	1	S 34 P F 2 (MAG)	F42EE	72	0.07	Switch	2000	N/A	144
54	Women's Bathroom	Bath Room	1	S 34 W F 1 (MAG)	F41EE	43	0.04	Switch	2000	N/A	86
78	Girls Bathroom	Bath Room	4	EP I 100	I100/1	100	0.40	Switch	2000	N/A	800
42	Room 116	Classrooms	12	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.38	Switch	2400	C-OCC	922
220	Hallway	Hallways	25	S 17 C F 1(ELE)	F21ILL	20	0.50	Switch	2280	N/A	1,140
13	Dark Room	Classrooms	9	S 32 P F 2 (ELE)	F42LL	60	0.54	Switch	2400	C-OCC	1,296
89	Hallway	Hallways	21	CF 13 2 LAMP	CFQ13/2-L	28	0.59	Switch	2280	N/A	1,341
204	Solarium	Classrooms	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.83	Switch	2400	C-OCC	1,987
11	Solarium	Classrooms	10	S 34 P F 2 (MAG)	F42EE	72	0.72	Switch	2400	C-OCC	1,728
Y	Exterior	Outdoor Lighti	4	I 100	I100/1	100	0.40	BR	4368	N/A	1,747
255	Exterior	Outdoor Lighti	3	39W-Rectangular shape	FXLED39/1	39	0.12	BR	4368	N/A	511
8	Exterior	Outdoor Lighti	6	MH 175	MH175/1	215	1.29	BR	4368	N/A	5,635
94	Exterior	Outdoor Lighti	13	SP I 120	I120/1	120	1.56	BR	4368	N/A	6,814
231	Exterior	Outdoor Lighti	6	WP400MH1	MH400/1	458	2.75	BR	4368	N/A	12,003
256	Exterior	Outdoor Lighti	4	CFL60W	CFL60/1	60	0.24	BR	4368	N/A	1,048
	Total		**1,596**				**95.85**				**214,549**

APPENDIX C

ECM Calculations

Summary of Energy Conservation Measures						
Energy Conservation Measure		**Approx. Costs ($)**	**Approx. Savings ($/year)**	**Payback (Years) w/o Incentive**	**Potential Incentive ($)***	**Payback (Years) w/ Incentive**
ECM-1	Replace Door & Window Seals	33,000	7,900	4.2	0.0	4.2
ECM-2	Add Insulation on the Attic	4,000	23,600	0.2	0.0	0.2
ECM-3	Replace Windows & Add Insulation to C-2 Doorway	35,000	2,100	16.7	0.0	16.7
ECM-4	Adjust DDC Schedules (Peak Demand Reduction)	10,000	6,700	1.5	0.0	1.5
ECM-5	Replace Domestic Water Heater (DWH)	20,000	17,400	1.1	600.0	1.1
ECM-6	Install Network Controller	2,000	2,800	0.7	0.0	0.7
ECM-7	Lighting Replacement / Upgrades	44,000	9,100	4.8	5,200.0	4.3
ECM-8	Install Lighting Controls (Occupancy Sensors)	11,000	4,600	2.4	1,900.0	2.0
ECM-9	Lighting Replacements with Lighting Controls (Occupancy Sensors)	55,000	11,700	4.7	7,100.0	4.1
ECM-10	Water Conservation (Low Flow Fixtures)	99,000	1,600	>20	0.0	>20
ECM-11	Replace Dishwasher Electric Booster Heater	20,000	1,600	12.5	500.0	12.2

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

ECM Summary Sheet

ECM-1 Replace Door & Window Seals

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
33,000	0	0	8,800	7,900	0	7,900	0.2	0	4.2	4.2

Expected Life: 5 years
Lifetime Savings: 0 kWh 44,000 therms $ 39,500

ECM-2 Add Insulation on the Attic

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
4,000	0	0	26,300	23,600	0	23,600	176.2	0	0.2	0.2

Expected Life: 30 years
Lifetime Savings: 0 kWh 789,000 therms $ 708,000

ECM-3 Replace Windows & Add Insulation to C-2 Doorway

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
35,000	0	0	2,300	2,100	0	2,100	0.8	0	16.7	16.7

Expected Life: 30 years
Lifetime Savings: 0 kWh 69,000 therms $ 63,000

ECM-4 Adjust DDC Schedules (Peak Demand Reduction)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
10,000	0	100	0	6,700	0	6,700	9.1	0	1.5	1.5

Expected Life: 15 years
Lifetime Savings: 0 kWh 0 therms $ 100,500

ECM-5 Replace Domestic Water Heater (DWH)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
20,000	0	0	19,300	17,400	0	17,400	17.4	600	1.1	1.1

Expected Life: 21 years
Lifetime Savings: 0 kWh 405,300 therms $ 365,400

ECM-6 Install Network Controller

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
2,000	18,000	0	0	2,800	0	2,800	17.4	0	0.7	0.7

Expected Life: 15 years
Lifetime Savings: 270,000 kWh 0 therms $ 42,000

ECM-7 Lighting Replacement / Upgrades

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
44,000	52,800	0	0	9,100	0	9,100	2.1	5,200	4.8	4.3

Expected Life: 15 years
Lifetime Savings: 792,000 kWh 0 therms $ 136,500

ECM-8 Install Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
11,000	29,600	0	0	4,600	0	4,600	5.3	1,900	2.4	2.0

Expected Life: 15 years
Lifetime Savings: 444,000 kWh 0 therms $ 69,000

ECM-9 Lighting Replacements with Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
55,000	71,500	0	0	11,700	0	11,700	2.2	7,100	4.7	4.1

Expected Life: 15 years
Lifetime Savings: 1,072,500 kWh 0 therms $ 175,500

ECM-10 Water Conservation (Low Flow Fixtures)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
99,000	0	0	0	1,600	0	1,600	(0.7)	0	>20	>20

Expected Life: 20 years
Lifetime Savings: 0 kWh 0 therms $ 32,000

ECM-11 Replace Dishwasher Electric Booster Heater

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
20,000	6,600	0	-300	1,600	0	1,600	0.2	500	12.5	12.2

Expected Life: 15 years
Lifetime Savings: 99,000 kWh -4,500 therms $ 24,000

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Utility Costs		Yearly Usage	MTCDE
$ 0.156	$/kWh blended		0.00042021
$ 0.139	$/kWh supply	828,247	0.00042021
$ 6.15	$/kW	249	0
$ 0.90	$/Therm	48,104	0.00533471
$ 1.52	$/kgal	660,000	0

Pompton Lakes High School

	Item	Savings						Cost	Simple Payback	MTCDE	Life Expectancy
		kW	kWh	therms	cooling kWh	kgal/yr	$				
ECM-1	Replace Door & Window Seals	0.0	0	8,776	0	0	$ 7,900	$ 33,221	4.2	46.8	5
ECM-2	Add Insulation on the Attic	0.0	0	26,276	0	0	$ 23,600	$ 4,003	0.2	140.2	30
ECM-3	Replace Windows & Add Insulation to C-2 Doorway	0.0	0	2,312	0	0	$ 2,100	$ 34,502	16.4	12.3	30
ECM-4	Adjust DDC Schedules (Peak Demand Reduction)	91.1	0	0	0	0	$ 6,700	$ 10,000	1.5	0.0	15.0
ECM-5	Replace Domestic Water Heater (DWH)	0.0	0	19,330	0	0	$ 17,400	$ 19,841	1.1	103.1	21.0
ECM-6	Install Network Controller	0.0	18,000	0	0	0	$ 2,800	$ 2,290	0.8	7.6	15.0
ECM-7	Lighting Replacement / Upgrades	24.2	52,750	0	0	0	$ 9,100	$ 44,058	4.8	22.2	15.0
ECM-8	Install Lighting Controls (Occupancy Sensors)	0.0	29,561	0	0	0	$ 4,600	$ 11,006	2.4	12.4	15.0
ECM-9	Lighting Replacements with Lighting Controls (Occupancy Sensors)	24.2	71,509	0	0	0	$ 11,700	$ 55,064	4.7	30.0	15.0
ECM-10	Water Conservation (Low Flow Fixtures)	0.0	0	0	0	1,083	$ 1,600	$ 99,102	61.9	0.0	20.0
ECM-11	Replace Dishwasher Electric Booster Heater	13.0	6,552	(280)	0	0	$ 1,600	$ 20,300	12.7	1.3	15.0

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ECM-1: Replace Door & Window Seals

Existing: Lack of door and window seals result in excessive heat loss and infiltration
Proposed: Install door and window seals and/or weather-stripping to reduce air infiltration

Heating System Efficiency	75%		Ex Occupied Clng Temp.	72	*F	Ex Occupied Htg Temp.	70	*F
Cooling System Efficiency	0.00	kW/ton	Ex Unoccupied Clng Temp.	85	*F	Ex Unoccupied Htg Temp.	55	*F
Linear Feet of Door Edge	4979.52		Cooling Occ Enthalpy Setpoint	27.5	Btu/lb	Electricity	$ 0.16	$/kWh
Existing Infiltration Factor*	1.5	cfm/LF	Cooling Unocc Enthalpy Setpoint	27.5	Btu/lb	Natural Gas	$ 0.90	$/therm
Proposed Infiltration Factor*	0.45	cfm/LF						

*Infiltration Factor per Carrier Handbook of Air Conditioning System Design based on average door seal gap calculated below.

					EXISTING LOADS		PROPOSED LOADS		COOLING ENERGY		HEATING ENERGY	
					Occupied	Unoccupied	Occupied	Unoccupied				
Avg Outdoor Air Temp. Bins °F	Avg Outdoor Air Enthalpy	Existing Equipment Bin Hours	Occupied Equipment Bin Hours	Unoccupied Equipment Bin Hours	Door Infiltration Load BTUH	Door Infiltration Load BTUH	Door Infiltration Load BTUH	Door Infiltration Load BTUH	Existing Cooling Energy kWh	Proposed Cooling Energy kWh	Existing Heating Energy therms	Proposed Heating Energy therms
A		B	C	D	E	F	G	H	I	J	K	L
115	44.7	0	0	0	-578,122	-578,122	-173,437	-173,437	0	0	0	0
110	42.7	0	0	0	-510,899	-510,899	-153,270	-153,270	0	0	0	0
105	40.7	0	0	0	-443,675	-443,675	-133,103	-133,103	0	0	0	0
100	39.7	0	0	0	-410,063	-410,063	-123,019	-123,019	0	0	0	0
95	37.7	3	1	2	-342,840	-342,840	-102,852	-102,852	0	0	0	0
90	35.7	34	12	22	-275,616	-275,616	-82,685	-82,685	0	0	0	0
85	33.7	131	47	84	-208,393	0	-62,518	0	0	0	0	0
80	31.3	500	179	321	-127,725	0	-38,317	0	0	0	0	0
75	29.7	620	221	399	-73,946	0	-22,184	0	0	0	0	0
70	28	664	237	427	0	0	0	0	0	0	0	0
65	25.2	854	305	549	40,334	0	12,100	0	0	0	164	49
60	21.8	927	331	596	80,668	0	24,200	0	0	0	356	107
55	18.8	600	214	386	121,002	0	36,301	0	0	0	346	104
50	16.9	610	218	392	161,336	40,334	48,401	12,100	0	0	680	204
45	14.5	611	218	393	201,671	80,668	60,501	24,200	0	0	1,009	303
40	12.7	656	234	422	242,005	121,002	72,601	36,301	0	0	1,436	431
35	10.9	1023	365	658	282,339	161,336	84,702	48,401	0	0	2,790	837
30	8.8	734	262	472	322,673	201,671	96,802	60,501	0	0	2,397	719
25	7.2	334	119	215	363,007	242,005	108,902	72,601	0	0	1,270	381
20	5.6	252	90	162	403,341	282,339	121,002	84,702	0	0	1,094	328
15	4.1	125	45	80	443,675	322,673	133,103	96,802	0	0	610	183
10	2.7	47	17	30	484,009	363,007	145,203	108,902	0	0	255	76
5	1.3	22	8	14	524,343	403,341	157,303	121,002	0	0	131	39
TOTALS		**8,747**	**3,124**	**5,623**					**0**	**0**	**12,537**	**3,761**

Existing Door Infiltration	**7,469**	**cfm**
Existing Unoccupied Door Infiltration	**7,469**	**cfm**
Proposed Door Infiltration	**2,241**	**cfm**
Proposed Unoccupied Door Infiltration	**2,241**	**cfm**

Savings	**8,776**	**therms**	**$ 7,898**
	0	**kWh**	**$ -**
			$ 7,898

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Multipliers	
Material:	0.98
Labor:	1.22
Equipment:	1.09

ECM-1 Replace Door & Window Seals Cost

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									$ -	
Door Seals (3'x7')	45	ea	$ 35	$ 50	$ -	$ 1,544	$ 2,745	$ -	$ 4,289	
36" Door Threshold Seal	45	ea	$ 50.00	$ 45.00	$ -	$ 2,205	$ 2,471	$ -	$ 4,676	
Side and Top Door Seal	45	ft	$ 3.00	$ 3.00		$ 132	$ 165	$ -	$ 297	
Window Seals	200	ea	$ 60.00	$ 50.00		$ 11,760	$ 12,200	$ -	$ 23,960	
						$ -	$ -	$ -	$ -	

$ 33,221	Subtotal
$ -	
$ -	
$ -	
$ 33,221	**Total**

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

ECM-2 Add Insulation in the Attic

Existing: Ceiling can lead to increased energy consumption due to infiltration/exfiltration and heat gain/loss.
Proposed: Install 6" fiberglass blown-in loose-fill insulation in attic cavity over exisiting insulation to reduce heat transfer.

Area of ceiling	14423.64	SF	Cooling System Efficiency		kW/ton	Heating System Efficiency	100%	
Existing Infiltration Factor	**0.20**	**cfm/SF**	Ex Occupied Clng Temp.	72	*F	Heating On Point	55	*F
Proposed Infiltration Factor	**0.20**	**cfm/SF**	Ex Unoccupied Clng Temp.	85	*F	Ex Occupied Htg Temp.	72	*F
Existing U Value	**0.083**	**Btuh/SF/°F**	Cooling Occ Enthalpy Setpoint	27.5	Btu/lb	Ex Unoccupied Htg Temp.	55	*F
Proposed U Value	**0.029**	**Btuh/SF/°F**	Cooling Unocc Enthalpy Setpoint	27.5	Btu/lb	Cooling Electricity	$ 0.156	$/kWh
						Heating Fuel Cost	$ 0.90	$/therm

Cost of ECM:	**$/ft²**	**Total Cost:**
RSMeans	$ 0.19	$ 2,740.49

					EXISTING LOADS		PROPOSED LOADS		COOLING ENERGY		HEATING ENERGY	
					Occupied	**Unoccupied**	**Occupied**	**Unoccupied**				
Avg Outdoor Air Temp. Bins °F	**Avg Outdoor Air Enthalpy**	**Existing Equipment Bin Hours**	**Occupied Equipment Bin Hours**	**Unoccupied Equipment Bin Hours**	**Wall Infiltration & Heat Load BTUH**	**Wall Infiltration & Heat Load BTUH**	**Wall Infiltration & Heat Load BTUH**	**Wall Infiltration & Heat Load BTUH**	**Existing Cooling Energy kWh**	**Proposed Cooling Energy kWh**	**Existing Heating Energy kWh**	**Proposed Heating Energy kWh**
A		**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
100	39.7	0	0	0	-192,027	-176,401	-170,250	-164,735	0	0	0	0
95	37.7	3	1	2	-160,054	-144,429	-142,166	-136,651	0	0	0	0
90	35.7	34	12	22	-128,082	-112,456	-114,083	-108,568	0	0	0	0
85	33.7	131	47	84	-96,110	0	-85,999	0	0	0	0	0
80	31.3	500	179	321	-58,945	0	-52,723	0	0	0	0	0
75	29.7	620	221	399	-32,165	0	-29,831	0	0	0	0	0
70	28	664	237	427	0	0	0	0	0	0	0	0
65	25.2	854	305	549	0	0	0	0	0	0	0	0
60	21.8	927	331	596	0	0	0	0	0	0	0	0
55	18.8	600	214	386	73,397	0	60,175	0	0	0	4,608	3,778
50	16.9	610	218	392	94,984	21,587	77,874	17,699	0	0	8,543	7,004
45	14.5	611	218	393	116,572	43,175	95,573	35,397	0	0	12,422	10,184
40	12.7	656	234	422	138,159	64,762	113,271	53,096	0	0	17,486	14,336
35	10.9	1023	365	658	159,747	86,350	130,970	70,795	0	0	33,739	27,661
30	8.8	734	262	472	181,334	107,937	148,669	88,493	0	0	28,850	23,653
25	7.2	334	119	215	202,921	129,524	166,367	106,192	0	0	15,241	12,495
20	5.6	252	90	162	224,509	151,112	184,066	123,891	0	0	13,093	10,734
15	4.1	125	45	80	246,096	172,699	201,765	141,589	0	0	7,285	5,973
10	2.7	47	17	30	267,684	194,286	219,463	159,288	0	0	3,036	2,489
5	1.3	22	8	14	289,271	215,874	237,162	176,987	0	0	1,560	1,279
TOTALS		**8,747**	**3,124**	**5,623**					0	0	**145,865**	**119,589**

Existing Ceiling Infiltration	**2,885**	**cfm**
Existing Ceiling Heat Transfer	**1,202**	**Btuh/°F**
Proposed Ceiling Infiltration	**2,885**	**cfm**
Proposed Ceiling Heat Transfer	**424**	**Btuh/°F**

Savings	**26,276**	**therms**	**$ 23,648**
	0	**kWh**	**$ -**
			$ 23,648

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ECM-2 Add Insulation in the Attic

Multipliers	
Material:	0.98
Labor:	1.22
Equipment:	1.09

Description: (from 2012 Rsmeans)	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									$ -	
Fiberglass Loose-fill blown in insulation	2,740.49	ft^2	$ 0.07	$ 0.48	$ 0.74	$ 188.00	$ 1,604.83	$ 2,210	$ 4,003.31	
						$ -	$ -	$ -	$ -	

$ 4,003.31	Subtotal
$ -	
$ -	
$ -	
$ 4,003.31	**Total**

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

ECM3-Replace Windows & Add Insulation to C-2 Doorway

Existing: Bad Seals on Windows can lead to increased energy consumption due to infiltration/exfiltration and heat gain/loss.
Proposed: Install 2" polyisocyanurate rigid board insulation in lower section of C-2 doorway area and replace windows to reduce heat transfer.

Area of ceiling	120	SF	Cooling System Efficiency		kW/ton	Heating System Efficiency	75%	
Existing Infiltration Factor	**0.20**	**cfm/SF**	Ex Occupied Clng Temp.	72	*F	Heating On Point	55	*F
Proposed Infiltration Factor	**0.20**	**cfm/SF**	Ex Unoccupied Clng Temp.	85	*F	Ex Occupied Htg Temp.	72	*F
Existing U Value	**0.490**	**Btuh/SF/°F**	Cooling Occ Enthalpy Setpoint	27.5	Btu/lb	Ex Unoccupied Htg Temp.	55	*F
Proposed U Value	**0.063**	**Btuh/SF/°F**	Cooling Unocc Enthalpy Setpoint	27.5	Btu/lb	Cooling Electricity	$ 0.156	$/kWh
						Heating Fuel Cost	$ 0.90	$/therm

					EXISTING LOADS		PROPOSED LOADS		COOLING ENERGY		HEATING ENERGY	
					Occupied	Unoccupied	Occupied	Unoccupied				
Avg Outdoor Air Temp. Bins °F	**Avg Outdoor Air Enthalpy**	**Existing Equipment Bin Hours**	**Occupied Equipment Bin Hours**	**Unoccupied Equipment Bin Hours**	**Wall Infiltration & Heat Load BTUH**	**Wall Infiltration & Heat Load BTUH**	**Wall Infiltration & Heat Load BTUH**	**Wall Infiltration & Heat Load BTUH**	**Existing Cooling Energy kWh**	**Proposed Cooling Energy kWh**	**Existing Heating Energy therms**	**Proposed Heating Energy therms**
A		**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
100	39.7	0	0	0	-2,965	-2,200	-1,528	-1,430	0	0	0	0
95	37.7	3	1	2	-2,455	-1,690	-1,274	-1,177	0	0	0	0
90	35.7	34	12	22	-1,944	-1,180	-1,021	-923	0	0	0	0
85	33.7	131	47	84	-1,434	0	-767	0	0	0	0	0
80	31.3	500	179	321	-881	0	-470	0	0	0	0	0
75	29.7	620	221	399	-414	0	-260	0	0	0	0	0
70	28	664	237	427	0	0	0	0	0	0	0	0
65	25.2	854	305	549	0	0	0	0	0	0	0	0
60	21.8	927	331	596	0	0	0	0	0	0	0	0
55	18.8	600	214	386	1,441	0	568	0	0	0	121	48
50	16.9	610	218	392	1,864	424	735	167	0	0	224	88
45	14.5	611	218	393	2,288	847	902	334	0	0	325	128
40	12.7	656	234	422	2,712	1,271	1,069	501	0	0	458	180
35	10.9	1023	365	658	3,136	1,695	1,237	668	0	0	883	348
30	8.8	734	262	472	3,559	2,119	1,404	836	0	0	755	298
25	7.2	334	119	215	3,983	2,542	1,571	1,003	0	0	399	157
20	5.6	252	90	162	4,407	2,966	1,738	1,170	0	0	343	135
15	4.1	125	45	80	4,830	3,390	1,905	1,337	0	0	191	75
10	2.7	47	17	30	5,254	3,813	2,072	1,504	0	0	79	31
5	1.3	22	8	14	5,678	4,237	2,239	1,671	0	0	41	16
TOTALS		**8,747**	**3,124**	**5,623**					0	0	**3,817**	**1,505**

Existing Ceiling Infiltration	**24**	**cfm**
Existing Ceiling Heat Transfer	**59**	**Btuh/°F**
Proposed Ceiling Infiltration	**24**	**cfm**
Proposed Ceiling Heat Transfer	**8**	**Btuh/°F**

Savings	**2,312**	**therms**	**$ 2,081**
	0	**kWh**	**$ -**
			$ 2,081

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ECM-3 Replace Windows & Add Insulation to C-2 Doorway Cost

Multipliers	
Material:	0.98
Labor:	1.22
Equipment:	1.09

Description: (from 2012 Rsmeans)	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									$ -	
2" Polyisocyanurate Rigid Board Insulation	120.00	ft^2	$ 0.78	$ 0.48	$ 0.74	$ 91.73	$ 70.27	$ 97	$ 258.79	
4'-5" x 5-3" Double Pane Aluminum Frame Window	185.52	ft^2	$ 90	$ 79.00		$ 16,362.86	$ 17,880.42		$ 34,243.28	
						$ -	$ -	$ -	$ -	

$ 34,502.07	Subtotal
$ -	
$ -	
$ -	
$ 34,502.07	**Total**

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ECM-4 Adjust DDC Schedules (Peak Demand Reduction)

Existing: The current control system for the school is a DDC control system, but they are styarting all HVAC equiopment at the same time and don't have it scheduled & organized properly.

Proposed: To reduce the peak demand of the kW of all the HVAC equipment an staggered start up can be implemented. What this does is stage all of the equipment, especially the equipment with a large demand, to start up at different times. This will reduce the peak demand charges resulting to a lower utility cost for the school.

Equipment	Location	Make	Model	Peak Demand kW
Condensing Unit	Rooftop - sawblade	Mitsubishi Electric	MUY-D30NA-1	6.325
Condensing Unit	Rooftop - sawblade	Mitsubishi Electric	MUY-D30NA-1	6.325
Packaged RTU	Rooftop - sawblade	Lennox Industries	CHP20-413-1Y	3.761
Pump Motor	Boiler Room	Emerson Motor Co.	R-3851	14.914
Pump Motor	Boiler Room	Emerson Motor Co.	R-3851	14.914
Water Circulation Pump	Boiler Room	Taco	007-SFS	0.119
Unit Ventilator	Cafeteria	AAF-McQuay Inc.	U.AMV.6.S1S.A.Z.65.R.23.AT.27.6.S.8	0.518
Unit Ventilator	Cafeteria	AAF-McQuay Inc.	U.AMV.6.S1S.A.Z.65.R.23.AT.27.6.S.8	0.518
Unit Ventilator (42) *	Classroom	AAF-McQuay Inc.	U.AVV.6.S10.A.Z.65.S.23.AN.22.G.1.B.1	18.732
Split Type A/C	Classroom	Sanyo	KMS1272	0.035
Evaporating Unit	Art Classroom	Mitsubishi Electric	MSY-D30NA-8	0.056
Unit Ventilator	Weight Room	AAF-McQuay Inc.	AD8CLEAAZ61615000	0.746
Unit Ventilator	Wood Shop Classroom	AAF-McQuay Inc.	AD8CLEAAZ61615000	0.746
Packaged RTU	Upper Rooftop	AAON, Inc.	RN-040-8-0-EB09-3D9	12.050
Packaged RTU	Upper Rooftop	AAON, Inc.	RN-040-8-0-EB09-3D9	12.050
Split System	Rooftop	Mitsubishi Electric	PUY-036	3.270
Condensing Unit	Rooftop	N/A	N/A	5.450
Condensing Unit	Rooftop	N/A	N/A	5.450

Equipment Types
HVAC
RTUs
Condensing units
Motors
unit vents - qty

		42 quantity

*typical unit ventilators in each classroom

Total Cost of ECM ($):	10,000.00

Maximum (kW):	**14.914**
Total (kW):	**105.977**
Savings (kW)	**91.063**
Savings ($)	**560.03622**

Lighting kW Demand	95.85
HVAC kW Demand	105.977
Total Utility Demand	248.6

Pompton Lakes Public Schools - NJBPU

CHA Project # 24698

Pompton Lakes High School

ECM-5: Replace Gas-Fired DHW Heater w/ Tankless Condensing Gas-Fired DHW Heater

Summary: Remove the Rheem Ruud Natural Gas DWH & Replace with 2 RinnaiRU98i Instantaneous Tankless Condensing DWH Heaters

Item	Value	Units	Formula/Comments
Avg. Monthly Utility Demand by Water Heater	**9,621**	Therms/month	Calculated from utility bill
Total Annual Utility Demand by Water Heater	11,544,925	MBTU/yr	1therm = 100 MBTU
Existing DHW Heater Efficiency	80%		Per manufacturer nameplate
Total Annual Hot Water Demand (w/ standby losses)	9,235,940	MBTU/yr	
Existing Tank Size	103	Gallons	Per manufacturer nameplate
Hot Water Piping System Capacity	20	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	Per building personnel
Room Temperature	75	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	1.2	MBH	
Annual Standby Hot Water Load	10,101	MBTU/yr	
New Tank Size	0	Gallons	Based on Rinnai RU98i instantaneous, tankless condensing DHW Heater
Hot Water Piping System Capacity	20	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	
Room Temperature	75	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	0.2	MBH	
Annual Standby Hot Water Load	1,643	MBTU/yr	
Total Annual Hot Water Demand	9,227,481	MBTU/yr	
Proposed Avg. Hot water heater efficiency	96%		Based on Rinnai RU98i instantaneous, tankless condensing DHW Heater
Proposed Fuel Use	96,120	Therms	Standby Losses and inefficient DHW heater eliminated
Utility Cost	$0.90	$/Therm	
Existing Operating Cost of DHW	$103,904	$/yr	
Proposed Operating Cost of DHW	$86,508	$/yr	

Savings Summary:		
Utility	**Energy Savings**	**Cost Savings**
Therms/yr	19,330	$17,397

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

ECM-5 Replace Domestic Water Heater (DWH)

Multipliers	
Material:	0.98
Labor:	1.22
Equipment:	1.09

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
Gas-Fired DHW Heater Removal	2	LS		$ 150		$ -	$ 366	$ -	$ 366	
High Efficiency Gas-Fired DHW Heater	2	LS	$ 4,000	$ 1,000		$ 7,840	$ 2,440	$ -	$ 10,280	
Miscellaneous Electrical	2	LS	$ 300	$ 500		$ 588	$ 1,220	$ -	$ 1,808	
Venting Kit	2	EA	$ 450	$ 650		$ 882	$ 1,586	$ -	$ 2,468	
Miscellaneous Piping and Valves	2	LS	$ 200	$ 500		$ 392	$ 1,220	$ -	$ 1,612	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$ 16,534	Subtotal
$ 3,307	20% Contingency
-	
-	
$ 19,841	**Total**

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

ECM-6 Ins Network Controller

Background Data **Average Consumption and Savings Figures**	**kWh**
Average Total Consumption per PC per Year	500-700
Average Energy and Cost Waste per PC per Year	350-450
Average savings transparantly available via Surveyor	120

Number of PCs	150
Return on Investment Analysis	
	kWh
Annual Energy Savings	18,000

Notes:

1. Savings are for the installation of a centralized computer management system installed on the client server that will centralize the power management functions that are native to the Windows environment.
2. Energy savings per computer are based on historical information from previous installations encompassing tens of thousands of computers.
3. There are approximately 60 computers in all

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

City cost multipliers from 2012 RS Means

Multipliers	
Material:	0.98
Labor:	1.22
Equipment:	1.09

Utility Costs	
$ 0.138	$/kWh blended
$ 0.113	$/kWh consumption
$ 6.044	$/kW
$ 1.036	$/Therm

ECM-5 Network Controller Cost

ECM Description Summary

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						$ -	$ -	$ -	$ -	
Network Controller	150	EA	$ 8	$ -		$ 1,176	$ -	$ -	$ 1,176	
IT Deployment	1	EA	$ -	$ 600		$ -	$ 732	$ -	$ 732	
						$ -	$ -	$ -	$ -	

Note: Costs are for energy savings only. Do not use for procurement

$ 1,908	Subtotal
$ 382	20% Contingency
-	
-	
$ 2,290	**Total**

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

ECM-10: Replace urinals and flush valves with low flow

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$1.52	$ / kGal
Urinals in Building	24	
Average Flushes / Urinal (per Day)	11	
Average Gallons / Flush	3.0	Gal

PROPOSED CONDITIONS		
Proposed Urinals to be Replaced	24	
Proposed Gallons / Flush	1.0	Gal
Proposed Material Cost	$521	
Proposed Installation Cost	$109	
Total cost of new urinals & valves	$15,120	

SAVINGS		
Current Urinal Water Use	287	kGal / year
Proposed Urinal Water Use	96	kGal / year
Water Savings	192	kGal / year
Cost Savings	$291	/ year
Simple Payback	51.9106	years

Pompton Lakes Public Schools - NJBPU

CHA Project # 24698

Pompton Lakes High School

ECM-10: Replace toilets and flush valves with low flow

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$1.52	$ / kGal
Toilets in Building	96	
Average Flushes / Toilet (per Day)	5	
Average Gallons / Flush	5.5	Gal

PROPOSED CONDITIONS		
Proposed Toilets to be Replaced	96	
Proposed Gallons / Flush	1.6	Gal
Proposed Material Cost of new Flush Valves	$532	
Proposed Installation cost of new Flush Valves	$109	
Total cost of new toilets & valves	$61,536	

SAVINGS		
Current Toilet Water Use	1,054	kGal / year
Proposed Toilet Water Use	307	kGal / year
Water Savings	747	kGal / year
Cost Savings	$1,136	/ year
Simple Payback	54.17126	years

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

ECM-10: Replace faucets with low flow

EXISTING CONDITIONS		
Cost of Water / 1000 Gallons	$1.52	$ / kGal
Faucets in Building	86	
Average Uses / Faucet (per day)	6	Gal
Average Time of Use	0.5	min
Average Flowrate	3.0	gpm

PROPOSED CONDITIONS		
Proposed Faucets to be Replaced	86	
Proposed Flowrate	1.5	gpm
Proposed Material Cost of new Faucets	$176	
Proposed Installation cost of new Faucets	$85	
Total cost of new faucets	$22,446	

SAVINGS		
Current Faucet Water Use	287	kGal / year
Proposed Faucet Water Use	144	kGal / year
Water Savings	144	kGal / year
Cost Savings	$218	/ year
Simple Payback	102.8	years

Pompton Lakes Public Schools - NJBPU
CHA Project # 2469
Pompton Lakes High School

DESCRIPTION: When fuel costs are less expensive than electric, converting from electric to fuel heating results in reduce cost.

GIVEN:	Electrical Energy Cost	=	$0.156	$/kWh
	Electrical Demand Cost	=	$ 6.15	$/kW
	Fuel Energy Cost	=	$0.90	$/Therm (Nat'l Gas)
	Booster Heater Capacity	=	13	Kw
	Operation (Hours/Day)	=	4.00	Hours/Day
	Operation (Days/Year)	=	180.00	Day/Year
	Operation (Hours/Year)	=	720	Hours/Year
ASSUMPTION:	Efficiency (Fuel)	=	80%	
	Efficiency (Electric)	=	100%	
	Operating Months per Year	=	10	
	Scheduled Usage	=	70%	
	Utilization Factor (Demand)	=	10%	

FORMULA:
Energy Use (Kwh) = (Capacity(Kw)) x (Hours of Operation/Year) x (Scheduled Usage) / (Efficiency)
Fuel Use (Unit) = (Electrical Use(Kwh)) x (3413 btu/kw) x (Electrical Efficiency) / (Fuel Efficiency) / (Heating Value of Fuel)
Energy Demand (Kw) = (Capacity (Kw)) x (Months/Year) x (Demand Utilization Factor)
Electrical Energy Cost ($) = (Energy Cost (Kwh) x ($/Kwh)) + (Demand (Kw) x ($/Kw))
Fuel Energy Cost ($) = ((Fuel Use(Unit) x Fuel Cost($/Unit))

CALCULATION:

	Capacity		Hours/Year		Scheduled Usage		Efficiency		
Electric Usage = (	13	)x(	720	)x(	70%	)/(	100%	) =	**6,552 Kwh**

	Electrical Use		Conversion		Efficiency (Electric)		Efficiency (Fuel)		Conversion		
Fuel Usage = (	6,552	)x(	3,413	) x (	100%	)/(	80%	)/(	100,000	) =	**280 Therm**

	Capacity		Months/Year		Utilization Factor		
Electric Demand =(	13	)*(	10	)*(	10%	) =	**13 Kw**

	Kwh		$/kwh		Kw		$/Kw		
Existing Energy Cost = (	**6,552**	)*(	$0.156	)+(	**13**	)*(	$6.15	) =	**$ 1,102**

	Therm		$/fuel unit		
Proposed Energy Cost = (	**280**	)*(	$0.900	) =	**$ 252**

Result

Existing Annual Use=	**6,552**	**Kwh**	**13**	**Kw**	**$**	**1,102**
Proposed Annual Use=			**280**	**Therm**	**$**	**252**

100% **Annual Savings=**	**6,552**	**Kwh**	**13**	**Kw**	**$**	**850**
Savings as Percent of Existing	**=**		**(280)**	**Therm**		**77%**

$/MCF (Nat'	1	1,030,000	btu/MCF	MCF	Mbh/MCF	1,030
$/CCF (Nat'	2	103,000	btu/CCF	CCF	Mbh/CCF	103
$/CF (Nat'l G	3	1,030	btu/CF	CF	Mbh/CF	1.030
$/Therm (Na	4	100,000	btu/Therm	Therm	Mbh/Therm	100
$/gal (LP Ga	5	91,500	btu/gallon	gallons	Mbh/gallon	91.5

Pompton Lakes Public Schools - NJBPU
CHA Project # 24698
Pompton Lakes High School

ECM-11: Replace Electric Booster Heater with Natural Gas - Cost

Multipliers	
Material:	0.98
Labor:	1.22
Equipment:	1.09

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	
Existing Heater Demolition	1	EA		$ 500	$ -	$ -	$ 612	$ -	$ 612
18 MBH Natural Gas Booster Heater	1	ea	$ 7,500	$ 2,500	$ 3,638	$ 7,320	$ 3,060	$ 3,951	$ 14,331
Natural Gas Piping	1	ls	$ 200	$ 500	$ -	$ 195	$ 612	$ -	$ 807
Venting	1	ls	$ 500	$ 500	$ -	$ 488	$ 612	$ -	$ 1,100

$ 16,900	Subtotal
$ 3,400.00	20% Contingency
-	
-	
$ 20,300	**Total**

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-7 Lighting Replacements **$6.15 $/kW**

		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 Without 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
191	Cafeteria	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.5	Switch	1600	2,362	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.5	Switch	1,600	2,362	-	0.0	$ -	$ -	$0		#DIV/0!
13	Boiler Room	6	S 32 P F 2 (ELE)	F42LL	60	0.4	Switch	2400	864	6	0	F42SSILL	48	0.3	Switch	2,400	691	173	0.1	$ 32.35	$ 637.50	$60	19.7	3.3
247	Supply Room	1	T 40 R F 3 (MAG)	F43SE	136	0.1	Switch	1000	136	1	T 28 R F 3	F43SSILL	72	0.1	Switch	1,000	72	64	0.1	$ 14.74	$ 128.25	$15	8.7	1.8
191	Supply Room	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.1	Switch	1000	123	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.1	Switch	1,000	123	-	0.0	$ -	$ -	$0		
13	Stock Room	9	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	1000	540	9	0	F42SSILL	48	0.4	Switch	1,000	432	108	0.1	$ 24.87	$ 956.25	$90	38.5	8.0
13	Basement Stairwell	3	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	2280	410	3	0	F42SSILL	48	0.1	Switch	2,280	328	82	0.0	$ 15.50	$ 318.75	$30	20.6	3.5
18	Basement Stairwell	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2280	511	2	0	F44SSILL	96	0.2	Switch	2,280	438	73	0.0	$ 13.78	$ 212.50	$20	15.4	2.6
254	Room B-5	2	F96T12/HO/ES	F84EHE	414	0.8	Switch	2400	1,987	2	F44SSILL-H	F28T8	131	0.3	Switch	2,400	629	1,358	0.6	$ 254.28	$ -	$0	0.0	0.0
11	Room B-5	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2400	518	3	C 28 P F 2	F42SSILL	48	0.1	Switch	2,400	346	173	0.1	$ 32.35	$ 318.75	$30	9.9	1.7
115	Room B-5	3	W 20 C F 2	F22SS	56	0.2	Switch	2400	403	3	W 17 W C 2	F22ILL	33	0.1	Switch	2,400	238	166	0.1	$ 31.00	$ 303.75	$30	9.8	1.7
13	Room B-5	2	S 32 P F 2 (ELE)	F42LL	60	0.1	Switch	2400	288	2	0	F42SSILL	48	0.1	Switch	2,400	230	58	0.0	$ 10.78	$ 212.50	$20	19.7	3.3
191	Kitchen	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.5	Switch	1600	787	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.5	Switch	1,600	787	-	0.0	$ -	$ -	$0		
13	Kitchen	4	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	1600	384	4	0	F42SSILL	48	0.2	Switch	1,600	307	77	0.0	$ 15.56	$ 425.00	$40	27.3	5.0
78	Kitchen	2	EP I 100	I100/1	100	0.2	Switch	1600	320	2	CF 26	CFQ26/1-L	27	0.1	Switch	1,600	86	234	0.1	$ 47.32	$ 40.50	$14	0.9	0.1
11	Hallway	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2280	164	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,280	109	55	0.0	$ 10.33	$ 106.25	$10	10.3	1.8
115	Storage	4	W 20 C F 2	F22SS	56	0.2	Switch	1000	224	4	W 17 W C 2	F22ILL	33	0.1	Switch	1,000	132	92	0.1	$ 21.18	$ 405.00	$40	19.1	4.0
115	Storage	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56	1	W 17 W C 2	F22ILL	33	0.0	Switch	1,000	33	23	0.0	$ 5.30	$ 101.25	$10	19.1	4.0
11	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72	1	C 28 P F 2	F42SSILL	48	0.0	Switch	1,000	48	24	0.0	$ 5.53	$ 106.25	$10	19.2	4.0
11	Girl's Locker Room	8	S 34 P F 2 (MAG)	F42EE	72	0.6	Switch	2800	1,613	8	C 28 P F 2	F42SSILL	48	0.4	Switch	2,800	1,075	538	0.2	$ 98.27	$ 850.00	$80	8.6	1.4
78	Girl's Coaches Office	1	EP I 100	I100/1	100	0.1	Switch	2400	240	1	CF 26	CFQ26/1-L	27	0.0	Switch	2,400	65	175	0.1	$ 32.80	$ 20.25	$7	0.6	0.1
78	Gymnasium	90	EP I 100	I100/1	100	9.0	Switch	2912	26,208	90	CF 26	CFQ26/1-L	27	2.4	Switch	2,912	7,076	19,132	6.6	$ 3,477.88	$ 1,822.50	$630	0.5	0.1
11	Boy's Locker Room	7	S 34 P F 2 (MAG)	F42EE	72	0.5	Switch	2800	1,411	7	C 28 P F 2	F42SSILL	48	0.3	Switch	2,800	941	470	0.2	$ 85.99	$ 743.75	$70	8.6	1.4
78	Boy's Locker Room	6	EP I 100	I100/1	100	0.6	Switch	2800	1,680	6	CF 26	CFQ26/1-L	27	0.2	Switch	2,800	454	1,226	0.4	$ 224.18	$ 121.50	$42	0.5	0.1
78	Storage	5	EP I 100	I100/1	100	0.5	Switch	1000	500	5	CF 26	CFQ26/1-L	27	0.1	Switch	1,000	135	365	0.4	$ 84.04	$ 101.25	$35	1.2	0.2
78	Storage	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	Switch	1,000	27	73	0.1	$ 16.81	$ 20.25	$7	1.2	0.2
11	Office	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	346	2	C 28 P F 2	F42SSILL	48	0.1	Switch	2,400	230	115	0.0	$ 21.56	$ 212.50	$20	9.9	1.7
78	Storage	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	Switch	1,000	27	73	0.1	$ 16.81	$ 20.25	$7	1.2	0.2
11	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72	1	C 28 P F 2	F42SSILL	48	0.0	Switch	1,000	48	24	0.0	$ 5.53	$ 106.25	$10	19.2	4.0
77	Front Vestibule	2	I 150	I150/1	150	0.3	Switch	2280	684	2	CF 26	CFQ26/1-L	27	0.1	Switch	2,280	123	561	0.2	$ 105.90	$ 13.50	$0	0.1	0.0
115	Front Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	Switch	2,000	66	46	0.0	$ 8.89	$ 101.25	$10	11.4	2.0
247	Room 102	12	T 40 R F 3 (MAG)	F43SE	136	1.6	Switch	2400	3,917	12	T 28 R F 3	F43SSILL	72	0.9	Switch	2,400	2,074	1,843	0.8	$ 345.03	$ 1,539.00	$180	4.5	0.7
13	Room 103	16	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,304	16	0	F42SSILL	48	0.8	Switch	2,400	1,843	461	0.2	$ 86.26	$ 1,700.00	$160	19.7	3.3
11	Nurse	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,400	115	58	0.0	$ 10.78	$ 106.25	$10	9.9	1.7
247	Nurse	8	T 40 R F 3 (MAG)	F43SE	136	1.1	Switch	2400	2,611	8	T 28 R F 3	F43SSILL	72	0.6	Switch	2,400	1,382	1,229	0.5	$ 230.02	$ 1,026.00	$120	4.5	0.7
115	Nurse	2	W 20 C F 2	F22SS	56	0.1	Switch	2400	269	2	W 17 W C 2	F22ILL	33	0.1	Switch	2,400	158	110	0.0	$ 20.67	$ 202.50	$20	9.8	1.7
115	Nurse Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	Switch	2,000	66	46	0.0	$ 8.89	$ 101.25	$10	11.4	2.0
11	Boy's Bathroom 1st Floor	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,000	96	48	0.0	$ 9.28	$ 106.25	$10	11.4	2.0
115	Boy's Bathroom 1st Floor	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	Switch	2,000	66	46	0.0	$ 8.89	$ 101.25	$10	11.4	2.0
11	Room 106	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2400	518	3	C 28 P F 2	F42SSILL	48	0.1	Switch	2,400	346	173	0.1	$ 32.35	$ 318.75	$30	9.9	1.7
X5	Library	8	CF42/1	CF42/1	42	0.3	Switch	2400	806	8	CF42/1	CF42/1	42	0.3	Switch	2,400	806	-	0.0	$ -	$ -	$0		
13	Library	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	Switch	2,400	1,382	346	0.1	$ 64.69	$ 1,275.00	$120	19.7	3.3
13	Library	17	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,448	17	0	F42SSILL	48	0.8	Switch	2,400	1,958	490	0.2	$ 91.65	$ 1,806.25	$170	19.7	3.3
13	Library	18	S 32 P F 2 (ELE)	F42LL	60	1.1	Switch	2400	2,592	18	0	F42SSILL	48	0.9	Switch	2,400	2,074	518	0.2	$ 97.04	$ 1,912.50	$180	19.7	3.3
13	Library	24	S 32 P F 2 (ELE)	F42LL	60	1.4	Switch	2400	3,456	24	0	F42SSILL	48	1.2	Switch	2,400	2,765	691	0.3	$ 129.39	$ 2,550.00	$240	19.7	3.3
13	Library	22	S 32 P F 2 (ELE)	F42LL	60	1.3	Switch	2400	3,168	22	0	F42SSILL	48	1.1	Switch	2,400	2,534	634	0.3	$ 118.60	$ 2,337.50	$220	19.7	3.3
11	Library Office	4	S 34 P F 2 (MAG)	F42EE	72	0.3	Switch	2400	691	4	C 28 P F 2	F42SSILL	48	0.2	Switch	2,400	461	230	0.1	$ 43.13	$ 425.00	$40	9.9	1.7
139	Library	7	SP 40 I	I40/1	40	0.3	Switch	2400	672	7	CF 13	CFQ13/1-L	15	0.1	Switch	2,400	252	420	0.2	$ 78.62	$ 283.50	$0	3.6	0.7
X5	Library	6	CF42/1	CF42/1	42	0.3	Switch	2400	605	6	0	CF42/1	42	0.3	Switch	2,400	605	-	0.0	$ -	$ -	$0		
54	Library Display Case	6	S 34 W F 1 (MAG)	F41EE	43	0.3	Switch	1000	258	6	S 28 W F 1	F41SSILL	26	0.2	Switch	1,000	156	102	0.1	$ 23.48	$ -	$0	0.0	0.0
139	Library	12	SP 40 I	I40/1	40	0.5	Switch	2400	1,152	12	CF 13	CFQ13/1-L	15	0.2	Switch	2,400	432	720	0.3	$ 134.78	$ 486.00	$0	3.6	0.7
18	Fourier	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	Switch	2280	255	1	0	F44SSILL	96	0.1	Switch	2,280	219	36	0.0	$ 6.89	$ 106.25	$10	15.4	2.6
18	Room 107	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	538	2	0	F44SSILL	96	0.2	Switch	2,400	461	77	0.0	$ 14.38	$ 212.50	$20	14.8	2.5
5	Room 107	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	Switch	2400	432	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	Switch	2,400	432	-	0.0	$ -	$ -	$0		
13	Room 108	3	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	2400	432	3	0	F42SSILL	48	0.1	Switch	2,400	346	86	0.0	$ 16.17	$ 318.75	$30	19.7	3.3
115	Room 108 Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	Switch	2,000	66	46	0.0	$ 8.89	$ 101.25	$10	11.4	2.0
18	Offices	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	538	2	0	F44SSILL	96	0.2	Switch	2,400	461	77	0.0	$ 14.38	$ 212.50	$20	14.8	2.5
78	Closet	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	Switch	1,000	27	73	0.1	$ 16.81	$ 20.25	$7	1.2	0.2
18	Principal	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	538	2	0	F44SSILL	96	0.2	Switch	2,400	461	77	0.0	$ 14.38	$ 212.50	$20	14.8	2.5

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-7 Lighting Replacements **$6.15 $/kW**

		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 Without 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
13	Offices	6	S 32 P F 2 (ELE)	F42LL	60	0.4	Switch	2400	864	6	0	F42SSILL	48	0.3	Switch	2,400	691	173	0.1	$ 32.35	$ 637.50	$60	19.7	3.3
11	Room 109	24	S 34 P F 2 (MAG)	F42EE	72	1.7	Switch	2400	4,147	24	C 28 P F 2	F42SSILL	48	1.2	Switch	2,400	2,765	1,382	0.6	$ 258.77	$ 2,550.00	$240	9.9	1.7
11	Girl's Bathroom 1st Floor	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2000	432	3	C 28 P F 2	F42SSILL	48	0.1	Switch	2,000	288	144	0.1	$ 27.84	$ 318.75	$30	11.4	2.0
78	Auditorium	48	EP I 100	I100/1	100	4.8	Switch	1000	4,800	48	CF 26	CFQ26/1-L	27	1.3	Switch	1,000	1,296	3,504	3.5	$ 806.75	$ 972.00	$336	1.2	0.2
78	Auditorium	24	EP I 100	I100/1	100	2.4	Switch	1000	2,400	24	CF 26	CFQ26/1-L	27	0.6	Switch	1,000	648	1,752	1.8	$ 403.38	$ 486.00	$168	1.2	0.2
89	Auditorium	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	1000	504	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	1,000	504	-	0.0	$ -	$ -	$0		
11	Room 112	30	S 34 P F 2 (MAG)	F42EE	72	2.2	Switch	2400	5,184	30	C 28 P F 2	F42SSILL	48	1.4	Switch	2,400	3,456	1,728	0.7	$ 323.47	$ 3,187.50	$300	9.9	1.7
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,400	115	58	0.0	$ 10.78	$ 106.25	$10	9.9	1.7
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,400	115	58	0.0	$ 10.78	$ 106.25	$10	9.9	1.7
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,400	115	58	0.0	$ 10.78	$ 106.25	$10	9.9	1.7
191	Basement Closet	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1000	246	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1,000	246	-	0.0	$ -	$ -	$0		
11	Basement Closet	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	144	2	C 28 P F 2	F42SSILL	48	0.1	Switch	1,000	96	48	0.0	$ 11.05	$ 212.50	$20	19.2	4.0
191	Basement Closet	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1000	246	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1,000	246	-	0.0	$ -	$ -	$0		
18	Room 114	12	T 32 R F 4 (ELE)	F44ILL	112	1.3	Switch	2400	3,226	12	0	F44SSILL	96	1.2	Switch	2,400	2,765	461	0.2	$ 86.26	$ 1,275.00	$120	14.8	2.5
142LED	Room 113	6	MH 100	MH100/1	128	0.8	Switch	2400	1,843	6	FXLED39	FXLED39/1	39	0.2	Switch	2,400	562	1,282	0.5	$ 239.90	$ -	$60	0.0	0.0
11	Room 115	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2400	2,419	14	C 28 P F 2	F42SSILL	48	0.7	Switch	2,400	1,613	806	0.3	$ 150.95	$ 1,487.50	$140	9.9	1.7
11	Room 115	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2400	2,419	14	C 28 P F 2	F42SSILL	48	0.7	Switch	2,400	1,613	806	0.3	$ 150.95	$ 1,487.50	$140	9.9	1.7
247	Room 117	21	T 40 R F 3 (MAG)	F43SE	136	2.9	Switch	2400	6,854	21	T 28 R F 3	F43SSILL	72	1.5	Switch	2,400	3,629	3,226	1.3	$ 603.80	$ 2,693.25	$315	4.5	0.7
247	Room 117	7	T 40 R F 3 (MAG)	F43SE	136	1.0	Switch	2400	2,285	7	T 28 R F 3	F43SSILL	72	0.5	Switch	2,400	1,210	1,075	0.4	$ 201.27	$ 897.75	$105	4.5	0.7
247	Room 117	4	T 40 R F 3 (MAG)	F43SE	136	0.5	Switch	2400	1,306	4	T 28 R F 3	F43SSILL	72	0.3	Switch	2,400	691	614	0.3	$ 115.01	$ 513.00	$60	4.5	0.7
247	Room 117	7	T 40 R F 3 (MAG)	F43SE	136	1.0	Switch	2400	2,285	7	T 28 R F 3	F43SSILL	72	0.5	Switch	2,400	1,210	1,075	0.4	$ 201.27	$ 897.75	$105	4.5	0.7
247	Room 117	2	T 40 R F 3 (MAG)	F43SE	136	0.3	Switch	2400	653	2	T 28 R F 3	F43SSILL	72	0.1	Switch	2,400	346	307	0.1	$ 57.51	$ 256.50	$30	4.5	0.7
89	Hallways 2nd Floor	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	2280	1,149	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	2,280	1,149	-	0.0	$ -	$ -	$0		
201	Room 211	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240	15	0	F43SSILL	72	1.1	Switch	2,400	2,592	648	0.3	$ 121.30	$ 1,593.75	$225	13.1	2.1
201	Room 211 - Office	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	Switch	2400	864	4	0	F43SSILL	72	0.3	Switch	2,400	691	173	0.1	$ 32.35	$ 425.00	$60	13.1	2.1
201	Room 209	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240	15	0	F43SSILL	72	1.1	Switch	2,400	2,592	648	0.3	$ 121.30	$ 1,593.75	$225	13.1	2.1
201	Room 208	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	Switch	2400	2,592	12	0	F43SSILL	72	0.9	Switch	2,400	2,074	518	0.2	$ 97.04	$ 1,275.00	$180	13.1	2.1
11	Girl's Bathroom 2nd Floor	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,000	96	48	0.0	$ 9.28	$ 106.25	$10	11.4	2.0
13	Room 206	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	Switch	2,400	1,382	346	0.1	$ 64.69	$ 1,275.00	$120	19.7	3.3
13	Room 207	16	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,304	16	0	F42SSILL	48	0.8	Switch	2,400	1,843	461	0.2	$ 86.26	$ 1,700.00	$160	19.7	3.3
11	Boy's Bathroom 2nd Floor	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,000	96	48	0.0	$ 9.28	$ 106.25	$10	11.4	2.0
115	Boy's Bathroom 2nd Floor	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	Switch	2,000	66	46	0.0	$ 8.89	$ 101.25	$10	11.4	2.0
201	Room 205	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240	15	0	F43SSILL	72	1.1	Switch	2,400	2,592	648	0.3	$ 121.30	$ 1,593.75	$225	13.1	2.1
11	Room 205 - Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,400	115	58	0.0	$ 10.78	$ 106.25	$10	9.9	1.7
13	Room 204	8	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,152	8	0	F42SSILL	48	0.4	Switch	2,400	922	230	0.1	$ 43.13	$ 850.00	$80	19.7	3.3
13	Room 202	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	Switch	2,400	1,382	346	0.1	$ 64.69	$ 1,275.00	$120	19.7	3.3
78	Room 202 - Stage	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	Switch	1,000	27	73	0.1	$ 16.81	$ 20.25	$7	1.2	0.2
115	Room 202 - Closet	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56	1	W 17 W C 2	F22ILL	33	0.0	Switch	1,000	33	23	0.0	$ 5.30	$ 101.25	$10	19.1	4.0
115	Room 202 - Closet	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56	1	W 17 W C 2	F22ILL	33	0.0	Switch	1,000	33	23	0.0	$ 5.30	$ 101.25	$10	19.1	4.0
13	Room 203	8	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,152	8	0	F42SSILL	48	0.4	Switch	2,400	922	230	0.1	$ 43.13	$ 850.00	$80	19.7	3.3
13	Room 201	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	Switch	2,400	1,382	346	0.1	$ 64.69	$ 1,275.00	$120	19.7	3.3
13	Storage	1	S 32 P F 2 (ELE)	F42LL	60	0.1	Switch	1000	60	1	0	F42SSILL	48	0.0	Switch	1,000	48	12	0.0	$ 2.76	$ 106.25	$10	38.5	8.0
115	Stair Case	1	W 20 C F 2	F22SS	56	0.1	Switch	2280	128	1	W 17 W C 2	F22ILL	33	0.0	Switch	2,280	75	52	0.0	$ 9.90	$ 101.25	$10	10.2	1.7
208	Stair Case	1	SP 26 R CF 2	CFQ25/2	66	0.1	Switch	2280	150	1	SP 26 R CF 2	CFQ25/2	66	0.1	Switch	2,280	150	-	0.0	$ -	$ -	$0		
18	Stair Case	4	T 32 R F 4 (ELE)	F44ILL	112	0.4	Switch	2280	1,021	4	0	F44SSILL	96	0.4	Switch	2,280	876	146	0.1	$ 27.55	$ 425.00	$40	15.4	2.6
6	Math Office	2	T 34 R F 4 (MAG)	F44EE	144	0.3	Switch	2400	691	2	T 28 R F 4	F44SSILL	96	0.2	Switch	2,400	461	230	0.1	$ 43.13	$ 262.50	$20	6.1	1.1
78	Attic	15	EP I 100	I100/1	100	1.5	Switch	1000	1,500	15	CF 26	CFQ26/1-L	27	0.4	Switch	1,000	405	1,095	1.1	$ 252.11	$ 303.75	$105	1.2	0.2
164	Exit Signs	9	X 7.0 W I 2	EI10/2	20	0.2	Switch	2280	410	9	X 1.5C LED	ELED1.5/1	1.5	0.0	Switch	2,280	31	380	0.2	$ 71.68	$ 1,154.25	$0	16.1	3.0
54	Room 27	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612	35	S 28 W F 1	F41SSILL	26	0.9	Switch	2,400	2,184	1,428	0.6	$ 267.31	$ -	$0	0.0	0.0
54	Room 28	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612	35	S 28 W F 1	F41SSILL	26	0.9	Switch	2,400	2,184	1,428	0.6	$ 267.31	$ -	$0	0.0	0.0
11	Room 25A	6	S 34 P F 2 (MAG)	F42EE	72	0.4	Switch	2400	1,037	6	C 28 P F 2	F42SSILL	48	0.3	Switch	2,400	691	346	0.1	$ 64.69	$ 637.50	$60	9.9	1.7
54	Room 26	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612	35	S 28 W F 1	F41SSILL	26	0.9	Switch	2,400	2,184	1,428	0.6	$ 267.31	$ -	$0	0.0	0.0
78	Girl's Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800	4	CF 26	CFQ26/1-L	27	0.1	Switch	2,000	216	584	0.3	$ 112.91	$ 81.00	$28	0.7	0.1
78	Maintenance Closet	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	Switch	1,000	27	73	0.1	$ 16.81	$ 20.25	$7	1.2	0.2
78	Boys Bathroom	1	EP I 100	I100/1	100	0.1	Switch	2000	200	1	CF 26	CFQ26/1-L	27	0.0	Switch	2,000	54	146	0.1	$ 28.23	$ 20.25	$7	0.7	0.1
11	Boys Bathroom	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	288	2	C 28 P F 2	F42SSILL	48	0.1	Switch	2,000	192	96	0.0	$ 18.56	$ 212.50	$20	11.4	2.0
54	Room 25	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,872	1,224	0.5	$ 229.12	$ -	$0	0.0	0.0
42	Room 25	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2,400	384	-	0.0	$ -	$ -	$0		
54	Room 24	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302	32	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,997	1,306	0.5	$ 244.40	$ -	$0	0.0	0.0
42	Room 24	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	230	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2,400	230	-	0.0	$ -	$ -	$0		
54	Room 32	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302	32	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,997	1,306	0.5	$ 244.40	$ -	$0	0.0	0.0
42	Room 32	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	230	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2,400	230	-	0.0	$ -	$ -	$0		
54	Room 22	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,872	1,224	0.5	$ 229.12	$ -	$0	0.0	0.0
42	Room 22	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2,400	384	-	0.0	$ -	$ -	$0		
54	Room 20	33	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,406	33	S 28 W F 1	F41SSILL	26	0.9	Switch	2,400	2,059	1,346	0.6	$ 252.03	$ -	$0	0.0	0.0

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-7 Lighting Replacements **$6.15 $/kW**

		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 Without 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
42	Room 20	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	154	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2,400	154	-	0.0	$ -	$ -	$0		
54	Room 21	28	S 34 W F 1 (MAG)	F41EE	43	1.2	Switch	2400	2,890	28	S 28 W F 1	F41SSILL	26	0.7	Switch	2,400	1,747	1,142	0.5	$ 213.85	$ -	$0	0.0	0.0
42	Room 21	7	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	538	7	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2,400	538	-	0.0	$ -	$ -	$0		
11	Hallways	13	S 34 P F 2 (MAG)	F42EE	72	0.9	Switch	2280	2,134	13	C 28 P F 2	F42SSILL	48	0.6	Switch	2,280	1,423	711	0.3	$ 134.31	$ 1,381.25	$130	10.3	1.8
164	Exit Signs	2	X 7.0 W I 2	EI10/2	20	0.0	Switch	2280	91	2	X 1.5C LED	ELED1.5/1	1.5	0.0	Switch	2,280	7	84	0.0	$ 15.93	$ 256.50	$0	16.1	3.0
11	Stairways	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2280	492	3	C 28 P F 2	F42SSILL	48	0.1	Switch	2,280	328	164	0.1	$ 30.99	$ 318.75	$30	10.3	1.8
18	Stairways	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	Switch	2280	255	1	0	F44SSILL	96	0.1	Switch	2,280	219	36	0.0	$ 6.89	$ 106.25	$10	15.4	2.6
54	Room 11	31	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,199	31	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,934	1,265	0.5	$ 236.76	$ -	$0	0.0	0.0
42	Room 11	4	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	307	4	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2,400	307	-	0.0	$ -	$ -	$0		
54	Room 10	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302	32	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,997	1,306	0.5	$ 244.40	$ -	$0	0.0	0.0
42	Room 10	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	230	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2,400	230	-	0.0	$ -	$ -	$0		
164	Exit Signs	2	X 7.0 W I 2	EI10/2	20	0.0	Switch	2280	91	2	X 1.5C LED	ELED1.5/1	1.5	0.0	Switch	2,280	7	84	0.0	$ 15.93	$ 256.50	$0	16.1	3.0
11	Hallway	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2280	2,298	14	C 28 P F 2	F42SSILL	48	0.7	Switch	2,280	1,532	766	0.3	$ 144.64	$ 1,487.50	$140	10.3	1.8
54	Room 12	33	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,406	33	S 28 W F 1	F41SSILL	26	0.9	Switch	2,400	2,059	1,346	0.6	$ 252.03	$ -	$0	0.0	0.0
42	Room 12	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	154	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2,400	154	-	0.0	$ -	$ -	$0		
54	Room 13	23	S 34 W F 1 (MAG)	F41EE	43	1.0	Switch	2400	2,374	23	S 28 W F 1	F41SSILL	26	0.6	Switch	2,400	1,435	938	0.4	$ 175.66	$ -	$0	0.0	0.0
42	Room 13	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	Switch	2400	922	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	Switch	2,400	922	-	0.0	$ -	$ -	$0		
54	Room 14	29	S 34 W F 1 (MAG)	F41EE	43	1.2	Switch	2400	2,993	29	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,810	1,183	0.5	$ 221.48	$ -	$0	0.0	0.0
42	Room 14	6	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	461	6	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2,400	461	-	0.0	$ -	$ -	$0		
54	Room 15	34	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,509	34	S 28 W F 1	F41SSILL	26	0.9	Switch	2,400	2,122	1,387	0.6	$ 259.67	$ -	$0	0.0	0.0
11	Maintenance Closet	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72	1	C 28 P F 2	F42SSILL	48	0.0	Switch	1,000	48	24	0.0	$ 5.53	$ 106.25	$10	19.2	4.0
78	Boy's Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800	4	CF 26	CFQ26/1-L	27	0.1	Switch	2,000	216	584	0.3	$ 112.91	$ 81.00	$28	0.7	0.1
54	Room 16	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,872	1,224	0.5	$ 229.12	$ -	$0	0.0	0.0
42	Room 16	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2,400	384	-	0.0	$ -	$ -	$0		
54	Room 18	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	Switch	2,400	1,872	1,224	0.5	$ 229.12	$ -	$0	0.0	0.0
42	Room 18	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2,400	384	-	0.0	$ -	$ -	$0		
11	Faculty Room	4	S 34 P F 2 (MAG)	F42EE	72	0.3	Switch	2400	691	4	C 28 P F 2	F42SSILL	48	0.2	Switch	2,400	461	230	0.1	$ 43.13	$ 425.00	$40	9.9	1.7
78	Faculty Room	1	EP I 100	I100/1	100	0.1	Switch	2400	240	1	CF 26	CFQ26/1-L	27	0.0	Switch	2,400	65	175	0.1	$ 32.80	$ 20.25	$7	0.6	0.1
11	Men's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,000	96	48	0.0	$ 9.28	$ 106.25	$10	11.4	2.0
11	Men's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,000	96	48	0.0	$ 9.28	$ 106.25	$10	11.4	2.0
11	Women's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	Switch	2,000	96	48	0.0	$ 9.28	$ 106.25	$10	11.4	2.0
54	Women's Bathroom	1	S 34 W F 1 (MAG)	F41EE	43	0.0	Switch	2000	86	1	S 28 W F 1	F41SSILL	26	0.0	Switch	2,000	52	34	0.0	$ 6.57	$ -	$0	0.0	0.0
78	Girls Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800	4	CF 26	CFQ26/1-L	27	0.1	Switch	2,000	216	584	0.3	$ 112.91	$ 81.00	$28	0.7	0.1
42	Room 116	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	Switch	2400	922	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	Switch	2,400	922	-	0.0	$ -	$ -	$0		
220	Hallway	25	S 17 C F 1(ELE)	F21ILL	20	0.5	Switch	2280	1,140	25	S 17 C F 1(ELE)	F21ILL	20	0.5	Switch	2,280	1,140	-	0.0	$ -	$ -	$0		
13	Dark Room	9	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,296	9	0	F42SSILL	48	0.4	Switch	2,400	1,037	259	0.1	$ 48.52	$ 956.25	$90	19.7	3.3
89	Hallway	21	CF 13 2 LAMP	CFQ13/2-L	28	0.6	Switch	2280	1,341	21	CF 13 2 LAMP	CFQ13/2-L	28	0.6	Switch	2,280	1,341	-	0.0	$ -	$ -	$0		
204	Solarium	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.8	Switch	2400	1,987	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.8	Switch	2,400	1,987	-	0.0	$ -	$ -	$0		
11	Solarium	10	S 34 P F 2 (MAG)	F42EE	72	0.7	Switch	2400	1,728	10	C 28 P F 2	F42SSILL	48	0.5	Switch	2,400	1,152	576	0.2	$ 107.82	$ 1,062.50	$100	9.9	1.7
Y	Exterior	4	I 100	I100/1	100	0.4	BR	4368	1,747	4	CF 26	CFQ26/1-L	27	0.1	BR	4,368	472	1,275	0.3	$ 221.08	$ 162.00	$0	0.7	0.1
255	Exterior	3	39W-Rectangular shaped LED floodlight	FXLED39/1	39	0.1	BR	4368	511	3	39W-Rectangular shaped LED floodlight	FXLED39/1	39	0.1	BR	4,368	511	-	0.0	$ -	$ -	$0		
8	Exterior	6	MH 175	MH175/1	215	1.3	BR	4368	5,635	6	FXLED39	FXLED39/1	39	0.2	BR	4,368	1,022	4,613	1.1	$ 799.54	$ 2,875.50	$60	3.6	0.6
94	Exterior	13	SP I 120	I120/1	120	1.6	BR	4368	6,814	13	CF 26	CFQ26/1-L	27	0.4	BR	4,368	1,533	5,281	1.2	$ 915.38	$ 526.50	$0	0.6	0.1
231	Exterior	6	WP400MH1	MH400/1	458	2.7	BR	4368	12,003	6	WP400MH1	MH400/1	458	2.7	BR	4,368	12,003	-	0.0	$ -	$ -	$0		
256	Exterior	4	CFL60W	CFL60/1	60	0.2	BR	4368	1,048	4	CFL60W	CFL60/1	60	0.2	BR	4,368	1,048	-	0.0	$ -	$ -	$0		
	Total	**649**				**54.0**			**117,820**	**649**			**4,338**	**29.8**				**65,070**	**52,750**	**24.2**	**$10,042**	**$44,058**	**$5,233**		
																		Demand Savings			**24.2**	**$1,789**			
																		kWh Savings			**52,750**	**$8,252**			
																		Total savings				**$10,042**		**4.4**	**3.9**

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity:** **$0.156 $/kWh**

ECM-8 Install Occupancy Sensors **$6.15 $/kW**

		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 Without 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 annual 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)	(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
191	Cafeteria	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.5	Switch	1600	2,361.6	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.5	C-OCC	1200	1,771.2	590.4	0.0	$92.36	$202.50	$35.00	2.2	1.8
13	Boiler Room	6	S 32 P F 2 (ELE)	F42LL	60	0.4	Switch	2400	864.0	6	S 32 P F 2 (ELE)	F42LL	60	0.4	OCC	1200	432.0	432.0	0.0	$67.58	$118.75	$20.00	1.8	1.5
247	Supply Room	1	T 40 R F 3 (MAG)	F43SE	136	0.1	Switch	1000	136.0	1	T 40 R F 3 (MAG)	F43SE	136	0.1	OCC	250	34.0	102.0	0.0	$15.96	$118.75	$20.00	7.4	6.2
191	Supply Room	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.1	Switch	1000	123.0	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.1	OCC	250	30.8	92.3	0.0	$14.43	$118.75	$20.00	8.2	6.8
13	Stock Room	9	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	1000	540.0	9	S 32 P F 2 (ELE)	F42LL	60	0.5	OCC	250	135.0	405.0	0.0	$63.36	$118.75	$20.00	1.9	1.6
13	Basement Stairwell	3	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	2280	410.4	3	S 32 P F 2 (ELE)	F42LL	60	0.2	N/A	2280	410.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
18	Basement Stairwell	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2280	510.7	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	N/A	2280	510.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
254	Room B-5	2	F96T12/HO/ES	F84EHE	414	0.8	Switch	2400	1,987.2	2	F96T12/HO/ES	F84EHE	414	0.8	C-OCC	1680	1,391.0	596.2	0.0	$93.27	$202.50	$35.00	2.2	1.8
11	Room B-5	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2400	518.4	3	S 34 P F 2 (MAG)	F42EE	72	0.2	C-OCC	1680	362.9	155.5	0.0	$24.33	$202.50	$35.00	8.3	6.9
115	Room B-5	3	W 20 C F 2	F22SS	56	0.2	Switch	2400	403.2	3	W 20 C F 2	F22SS	56	0.2	C-OCC	1680	282.2	121.0	0.0	$18.92	$202.50	$35.00	10.7	8.9
13	Room B-5	2	S 32 P F 2 (ELE)	F42LL	60	0.1	Switch	2400	288.0	2	S 32 P F 2 (ELE)	F42LL	60	0.1	C-OCC	1680	201.6	86.4	0.0	$13.52	$202.50	$35.00	15.0	12.4
191	Kitchen	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.5	Switch	1600	787.2	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.5	OCC	1200	590.4	196.8	0.0	$30.79	$118.75	$20.00	3.9	3.2
13	Kitchen	4	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	1600	384.0	4	S 32 P F 2 (ELE)	F42LL	60	0.2	OCC	1200	288.0	96.0	0.0	$15.02	$118.75	$20.00	7.9	6.6
78	Kitchen	2	EP I 100	I100/1	100	0.2	Switch	1600	320.0	2	EP I 100	I100/1	100	0.2	N/A	1200	240.0	80.0	0.0	$12.52	$0.00	$0.00	0.0	0.0
11	Hallway	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2280	164.2	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	2280	164.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
115	Storage	4	W 20 C F 2	F22SS	56	0.2	Switch	1000	224.0	4	W 20 C F 2	F22SS	56	0.2	OCC	250	56.0	168.0	0.0	$26.28	$118.75	$20.00	4.5	3.8
115	Storage	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56.0	1	W 20 C F 2	F22SS	56	0.1	OCC	250	14.0	42.0	0.0	$6.57	$118.75	$20.00	18.1	15.0
11	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	250	18.0	54.0	0.0	$8.45	$118.75	$20.00	14.1	11.7
11	Girl's Locker Room	8	S 34 P F 2 (MAG)	F42EE	72	0.6	Switch	2800	1,612.8	8	S 34 P F 2 (MAG)	F42EE	72	0.6	N/A	2000	1,152.0	460.8	0.0	$72.09	$0.00	$0.00	0.0	0.0
78	Girl's Coaches Office	1	EP I 100	I100/1	100	0.1	Switch	2400	240.0	1	EP I 100	I100/1	100	0.1	OCC	1200	120.0	120.0	0.0	$18.77	$118.75	$20.00	6.3	5.3
78	Gymnasium	90	EP I 100	I100/1	100	9.0	Switch	2912	26,208.0	90	EP I 100	I100/1	100	9.0	C-OCC	2912	26,208.0	0.0	0.0	$0.00	$202.50	$35.00		#DIV/0!
11	Boy's Locker Room	7	S 34 P F 2 (MAG)	F42EE	72	0.5	Switch	2800	1,411.2	7	S 34 P F 2 (MAG)	F42EE	72	0.5	OCC	2000	1,008.0	403.2	0.0	$63.08	$118.75	$20.00	1.9	1.6
78	Boy's Locker Room	6	EP I 100	I100/1	100	0.6	Switch	2800	1,680.0	6	EP I 100	I100/1	100	0.6	OCC	2000	1,200.0	480.0	0.0	$75.09	$118.75	$20.00	1.6	1.3
78	Storage	5	EP I 100	I100/1	100	0.5	Switch	1000	500.0	5	EP I 100	I100/1	100	0.5	OCC	250	125.0	375.0	0.0	$58.67	$118.75	$20.00	2.0	1.7
78	Storage	1	EP I 100	I100/1	100	0.1	Switch	1000	100.0	1	EP I 100	I100/1	100	0.1	OCC	250	25.0	75.0	0.0	$11.73	$118.75	$20.00	10.1	8.4
11	Office	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	345.6	2	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	1200	172.8	172.8	0.0	$27.03	$118.75	$20.00	4.4	3.7
78	Storage	1	EP I 100	I100/1	100	0.1	Switch	1000	100.0	1	EP I 100	I100/1	100	0.1	OCC	250	25.0	75.0	0.0	$11.73	$118.75	$20.00	10.1	8.4
11	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	250	18.0	54.0	0.0	$8.45	$118.75	$20.00	14.1	11.7
77	Front Vestibule	2	I 150	I150/1	150	0.3	Switch	2280	684.0	2	I 150	I150/1	150	0.3	N/A	2280	684.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
115	Front Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112.0	1	W 20 C F 2	F22SS	56	0.1	N/A	1800	100.8	11.2	0.0	$1.75	$0.00	$0.00	0.0	0.0
247	Room 102	12	T 40 R F 3 (MAG)	F43SE	136	1.6	Switch	2400	3,916.8	12	T 40 R F 3 (MAG)	F43SE	136	1.6	C-OCC	1680	2,741.8	1,175.0	0.0	$183.83	$202.50	$35.00	1.1	0.9
13	Room 103	16	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,304.0	16	S 32 P F 2 (ELE)	F42LL	60	1.0	C-OCC	1680	1,612.8	691.2	0.0	$108.13	$202.50	$35.00	1.9	1.5
11	Nurse	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	172.8	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	1200	86.4	86.4	0.0	$13.52	$118.75	$20.00	8.8	7.3
247	Nurse	8	T 40 R F 3 (MAG)	F43SE	136	1.1	Switch	2400	2,611.2	8	T 40 R F 3 (MAG)	F43SE	136	1.1	OCC	1200	1,305.6	1,305.6	0.0	$204.25	$118.75	$20.00	0.6	0.5
115	Nurse	2	W 20 C F 2	F22SS	56	0.1	Switch	2400	268.8	2	W 20 C F 2	F22SS	56	0.1	OCC	1200	134.4	134.4	0.0	$21.03	$118.75	$20.00	5.6	4.7
115	Nurse Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112.0	1	W 20 C F 2	F22SS	56	0.1	N/A	1800	100.8	11.2	0.0	$1.75	$0.00	$0.00	0.0	0.0
11	Boy's Bathroom 1st	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	129.6	14.4	0.0	$2.25	$0.00	$0.00	0.0	0.0
115	Boy's Bathroom 1st	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112.0	1	W 20 C F 2	F22SS	56	0.1	N/A	1800	100.8	11.2	0.0	$1.75	$0.00	$0.00	0.0	0.0
11	Room 106	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2400	518.4	3	S 34 P F 2 (MAG)	F42EE	72	0.2	C-OCC	1680	362.9	155.5	0.0	$24.33	$202.50	$35.00	8.3	6.9
X5	Library	8	CF42/1	CF42/1	42	0.3	Switch	2400	806.4	8	CF42/1	CF42/1	42	0.3	C-OCC	1680	564.5	241.9	0.0	$37.85	$202.50	$35.00	5.4	4.4
13	Library	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728.0	12	S 32 P F 2 (ELE)	F42LL	60	0.7	C-OCC	1680	1,209.6	518.4	0.0	$81.10	$202.50	$35.00	2.5	2.1
13	Library	17	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,448.0	17	S 32 P F 2 (ELE)	F42LL	60	1.0	C-OCC	1680	1,713.6	734.4	0.0	$114.89	$202.50	$35.00	1.8	1.5
13	Library	18	S 32 P F 2 (ELE)	F42LL	60	1.1	Switch	2400	2,592.0	18	S 32 P F 2 (ELE)	F42LL	60	1.1	C-OCC	1680	1,814.4	777.6	0.0	$121.65	$202.50	$35.00	1.7	1.4
13	Library	24	S 32 P F 2 (ELE)	F42LL	60	1.4	Switch	2400	3,456.0	24	S 32 P F 2 (ELE)	F42LL	60	1.4	C-OCC	1680	2,419.2	1,036.8	0.0	$162.20	$202.50	$35.00	1.2	1.0
13	Library	22	S 32 P F 2 (ELE)	F42LL	60	1.3	Switch	2400	3,168.0	22	S 32 P F 2 (ELE)	F42LL	60	1.3	C-OCC	1680	2,217.6	950.4	0.0	$148.68	$202.50	$35.00	1.4	1.1
11	Library Office	4	S 34 P F 2 (MAG)	F42EE	72	0.3	Switch	2400	691.2	4	S 34 P F 2 (MAG)	F42EE	72	0.3	OCC	1200	345.6	345.6	0.0	$54.07	$118.75	$20.00	2.2	1.8
139	Library	7	SP 40 I	I40/1	40	0.3	Switch	2400	672.0	7	SP 40 I	I40/1	40	0.3	C-OCC	1680	470.4	201.6	0.0	$31.54	$202.50	$35.00	6.4	5.3
X5	Library	6	CF42/1	CF42/1	42	0.3	Switch	2400	604.8	6	CF42/1	CF42/1	42	0.3	C-OCC	1680	423.4	181.4	0.0	$28.39	$202.50	$35.00	7.1	5.9
54	Library Display Case	6	S 34 W F 1 (MAG)	F41EE	43	0.3	Switch	1000	258.0	6	S 34 W F 1 (MAG)	F41EE	43	0.3	OCC	250	64.5	193.5	0.0	$30.27	$118.75	$20.00	3.9	3.3
139	Library	12	SP 40 I	I40/1	40	0.5	Switch	2400	1,152.0	12	SP 40 I	I40/1	40	0.5	C-OCC	1680	806.4	345.6	0.0	$54.07	$202.50	$35.00	3.7	3.1
18	Fourier	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	Switch	2280	255.4	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	OCC	2280	255.4	0.0	0.0	$0.00	$118.75	$20.00		#DIV/0!
18	Room 107	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	537.6	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	C-OCC	1680	376.3	161.3	0.0	$25.23	$202.50	$35.00	8.0	6.6
5	Room 107	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	Switch	2400	432.0	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	C-OCC	1680	302.4	129.6	0.0	$20.28	$202.50	$35.00	10.0	8.3
13	Room 108	3	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	2400	432.0	3	S 32 P F 2 (ELE)	F42LL	60	0.2	C-OCC	1680	302.4	129.6	0.0	$20.28	$202.50	$35.00	10.0	8.3
115	Room 108 Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112.0	1	W 20 C F 2	F22SS	56	0.1	N/A	1800	100.8	11.2	0.0	$1.75	$0.00	$0.00	0.0	0.0
18	Offices	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	537.6	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	OCC	1200	268.8	268.8	0.0	$42.05	$118.75	$20.00	2.8	2.3
78	Closet	1	EP I 100	I100/1	100	0.1	Switch	1000	100.0	1	EP I 100	I100/1	100	0.1	OCC	250	25.0	75.0	0.0	$11.73	$118.75	$20.00	10.1	8.4
18	Principal	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	537.6	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	OCC	1200	268.8	268.8	0.0	$42.05	$118.75	$20.00	2.8	2.3
13	Offices	6	S 32 P F 2 (ELE)	F42LL	60	0.4	Switch	2400	864.0	6	S 32 P F 2 (ELE)	F42LL	60	0.4	OCC	1200	432.0	432.0	0.0	$67.58	$118.75	$20.00	1.8	1.5
11	Room 109	24	S 34 P F 2 (MAG)	F42EE	72	1.7	Switch	2400	4,147.2	24	S 34 P F 2 (MAG)	F42EE	72	1.7	C-OCC	1680	2,903.0	1,244.2	0.0	$194.64	$202.50	$35.00	1.0	0.9
11	Girl's Bathroom 1st Floor	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2000	432.0	3	S 34 P F 2 (MAG)	F42EE	72	0.2	N/A	1800	388.8	43.2	0.0	$6.76	$0.00	$0.00	0.0	0.0
78	Auditorium	48	EP I 100	I100/1	100	4.8	Switch	1000	4,800.0	48	EP I 100	I100/1	100	4.8	C-OCC	750	3,600.0	1,200.0	0.0	$187.73	$202.50	$35.00	1.1	0.9
78	Auditorium	24	EP I 100	I100/1	100	2.4	Switch	1000	2,400.0	24	EP I 100	I100/1	100	2.4	C-OCC	750	1,800.0	600.0	0.0	$93.87	$202.50	$35.00	2.2	1.8
89	Auditorium	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	1000	504.0	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	C-OCC	750	378.0	126.0	0.0	$19.71	$202.50	$35.00	10.3	8.5
11	Room 112	30	S 34 P F 2 (MAG)	F42EE	72	2.2	Switch	2400	5,184.0	30	S 34 P F 2 (MAG)	F42EE	72	2.2	C-OCC	1200	2,592.0	2,592.0	0.0	$405.50	$202.50	$35.00	0.5	0.4
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	172.8	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	1200	86.4	86.4	0.0	$13.52	$118.75	$20.00	8.8	7.3
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	172.8	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	1200	86.4	86.4	0.0	$13.52	$118.75	$20.00	8.8	7.3
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	172.8	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	1200	86.4	86.4	0.0	$13.52	$118.75	$20.00	8.8	7.3
191	Basement Closet	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1000	246.0	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	OCC	250	61.5	184.5	0.0	$28.86	$118.75	$20.00	4.1	3.4
11	Basement Closet	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	144.0	2	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	250	36.0	108.0	0.0	$16.90	$118.75	$20.00	7.0	5.8
191	Basement Closet	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1000	246.0	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	OCC	250	61.5	184.5	0.0	$28.86	$118.75	$20.00	4.1	3.4
18	Room 114	12	T 32 R F 4 (ELE)	F44ILL	112	1.3	Switch	2400	3,225.6	12	T 32 R F 4 (ELE)	F44ILL	112	1.3	C-OCC	1680	2,257.9	967.7	0.0	$151.39	$202.50	$35.00	1.3	1.1
142LED	Room 113	6	MH 100	MH100/1	128	0.8	Switch	2400	1,843.2	6	MH 100	MH100/1	128	0.8	C-OCC	1680	1,290.2	553.0	0.0	$86.51	$202.50	$35.00	2.3	1.9
11	Room 115	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2400	2,419.2	14	S 34 P F 2 (MAG)	F42EE	72	1.0	C-OCC	1680	1,693.4	725.8	0.0	$113.54	$202.50	$35.00	1.8	1.5

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698

Cost of Electricity: **$0.156 $/kWh**

ECM-8 Install Occupancy Sensors

$6.15 $/kW

		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 Without 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 annual 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)	(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
11	Room 115	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2400	2,419.2	14	S 34 P F 2 (MAG)	F42EE	72	1.0	C-OCC	1680	1,693.4	725.8	0.0	$113.54	$202.50	$35.00	1.8	1.5
247	Room 117	21	T 40 R F 3 (MAG)	F43SE	136	2.9	Switch	2400	6,854.4	21	T 40 R F 3 (MAG)	F43SE	136	2.9	C-OCC	1680	4,798.1	2,056.3	0.0	$321.70	$202.50	$35.00	0.6	0.5
247	Room 117	7	T 40 R F 3 (MAG)	F43SE	136	1.0	Switch	2400	2,284.8	7	T 40 R F 3 (MAG)	F43SE	136	1.0	C-OCC	1680	1,599.4	685.4	0.0	$107.23	$202.50	$35.00	1.9	1.6
247	Room 117	4	T 40 R F 3 (MAG)	F43SE	136	0.5	Switch	2400	1,305.6	4	T 40 R F 3 (MAG)	F43SE	136	0.5	C-OCC	1680	913.9	391.7	0.0	$61.28	$202.50	$35.00	3.3	2.7
247	Room 117	7	T 40 R F 3 (MAG)	F43SE	136	1.0	Switch	2400	2,284.8	7	T 40 R F 3 (MAG)	F43SE	136	1.0	C-OCC	1680	1,599.4	685.4	0.0	$107.23	$202.50	$35.00	1.9	1.6
247	Room 117	2	T 40 R F 3 (MAG)	F43SE	136	0.3	Switch	2400	652.8	2	T 40 R F 3 (MAG)	F43SE	136	0.3	C-OCC	1680	457.0	195.8	0.0	$30.64	$202.50	$35.00	6.6	5.5
89	Hallways 2nd Floor	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	2280	1,149.1	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	N/A	2280	1,149.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
201	Room 211	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240.0	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	C-OCC	1680	2,268.0	972.0	0.0	$152.06	$202.50	$35.00	1.3	1.1
201	Room 211 - Office	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	Switch	2400	864.0	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	OCC	1200	432.0	432.0	0.0	$67.58	$118.75	$20.00	1.8	1.5
201	Room 209	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240.0	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	C-OCC	1680	2,268.0	972.0	0.0	$152.06	$202.50	$35.00	1.3	1.1
201	Room 208	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	Switch	2400	2,592.0	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	C-OCC	1680	1,814.4	777.6	0.0	$121.65	$202.50	$35.00	1.7	1.4
11	Girl's Bathroom 2nd	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	129.6	14.4	0.0	$2.25	$0.00	$0.00	0.0	0.0
13	Room 206	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728.0	12	S 32 P F 2 (ELE)	F42LL	60	0.7	C-OCC	1680	1,209.6	518.4	0.0	$81.10	$202.50	$35.00	2.5	2.1
13	Room 207	16	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,304.0	16	S 32 P F 2 (ELE)	F42LL	60	1.0	C-OCC	1680	1,612.8	691.2	0.0	$108.13	$202.50	$35.00	1.9	1.5
11	Boy's Bathroom 2nd	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	129.6	14.4	0.0	$2.25	$0.00	$0.00	0.0	0.0
115	Boy's Bathroom 2nd	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112.0	1	W 20 C F 2	F22SS	56	0.1	N/A	1800	100.8	11.2	0.0	$1.75	$0.00	$0.00	0.0	0.0
201	Room 205	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240.0	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	C-OCC	1680	2,268.0	972.0	0.0	$152.06	$202.50	$35.00	1.3	1.1
11	Room 205 - Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	172.8	1	S 34 P F 2 (MAG)	F42EE	72	0.1	OCC	1200	86.4	86.4	0.0	$13.52	$118.75	$20.00	8.8	7.3
13	Room 204	8	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,152.0	8	S 32 P F 2 (ELE)	F42LL	60	0.5	C-OCC	1680	806.4	345.6	0.0	$54.07	$202.50	$35.00	3.7	3.1
13	Room 202	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728.0	12	S 32 P F 2 (ELE)	F42LL	60	0.7	C-OCC	1680	1,209.6	518.4	0.0	$81.10	$202.50	$35.00	2.5	2.1
78	Room 202 - Stage	1	EP I 100	I100/1	100	0.1	Switch	1000	100.0	1	EP I 100	I100/1	100	0.1	C-OCC	750	75.0	25.0	0.0	$3.91	$202.50	$35.00	51.8	42.8
115	Room 202 - Closet	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56.0	1	W 20 C F 2	F22SS	56	0.1	OCC	250	14.0	42.0	0.0	$6.57	$118.75	$20.00	18.1	15.0
115	Room 202 - Closet	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56.0	1	W 20 C F 2	F22SS	56	0.1	OCC	250	14.0	42.0	0.0	$6.57	$118.75	$20.00	18.1	15.0
13	Room 203	8	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,152.0	8	S 32 P F 2 (ELE)	F42LL	60	0.5	C-OCC	1680	806.4	345.6	0.0	$54.07	$202.50	$35.00	3.7	3.1
13	Room 201	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728.0	12	S 32 P F 2 (ELE)	F42LL	60	0.7	C-OCC	1680	1,209.6	518.4	0.0	$81.10	$202.50	$35.00	2.5	2.1
13	Storage	1	S 32 P F 2 (ELE)	F42LL	60	0.1	Switch	1000	60.0	1	S 32 P F 2 (ELE)	F42LL	60	0.1	OCC	250	15.0	45.0	0.0	$7.04	$118.75	$20.00	16.9	14.0
115	Stair Case	1	W 20 C F 2	F22SS	56	0.1	Switch	2280	127.7	1	W 20 C F 2	F22SS	56	0.1	N/A	2280	127.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
208	Stair Case	1	SP 26 R CF 2	CFQ25/2	66	0.1	Switch	2280	150.5	1	SP 26 R CF 2	CFQ25/2	66	0.1	N/A	2280	150.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
18	Stair Case	4	T 32 R F 4 (ELE)	F44ILL	112	0.4	Switch	2280	1,021.4	4	T 32 R F 4 (ELE)	F44ILL	112	0.4	N/A	2280	1,021.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
6	Math Office	2	T 34 R F 4 (MAG)	F44EE	144	0.3	Switch	2400	691.2	2	T 34 R F 4 (MAG)	F44EE	144	0.3	OCC	1200	345.6	345.6	0.0	$54.07	$118.75	$20.00	2.2	1.8
78	Attic	15	EP I 100	I100/1	100	1.5	Switch	1000	1,500.0	15	EP I 100	I100/1	100	1.5	N/A	250	375.0	1,125.0	0.0	$176.00	$0.00	$0.00	0.0	0.0
164	Exit Signs	9	X 7.0 W I 2	EI10/2	20	0.2	Switch	2280	410.4	9	X 7.0 W I 2	EI10/2	20	0.2	N/A	2280	410.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
54	Room 27	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612.0	35	S 34 W F 1 (MAG)	F41EE	43	1.5	C-OCC	1680	2,528.4	1,083.6	0.0	$169.52	$202.50	$35.00	1.2	1.0
54	Room 28	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612.0	35	S 34 W F 1 (MAG)	F41EE	43	1.5	C-OCC	1680	2,528.4	1,083.6	0.0	$169.52	$202.50	$35.00	1.2	1.0
11	Room 25A	6	S 34 P F 2 (MAG)	F42EE	72	0.4	Switch	2400	1,036.8	6	S 34 P F 2 (MAG)	F42EE	72	0.4	C-OCC	1680	725.8	311.0	0.0	$48.66	$202.50	$35.00	4.2	3.4
54	Room 26	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612.0	35	S 34 W F 1 (MAG)	F41EE	43	1.5	C-OCC	1680	2,528.4	1,083.6	0.0	$169.52	$202.50	$35.00	1.2	1.0
78	Girl's Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800.0	4	EP I 100	I100/1	100	0.4	N/A	1800	720.0	80.0	0.0	$12.52	$0.00	$0.00	0.0	0.0
78	Maintenance Closet	1	EP I 100	I100/1	100	0.1	Switch	1000	100.0	1	EP I 100	I100/1	100	0.1	OCC	250	25.0	75.0	0.0	$11.73	$118.75	$20.00	10.1	8.4
78	Boys Bathroom	1	EP I 100	I100/1	100	0.1	Switch	2000	200.0	1	EP I 100	I100/1	100	0.1	N/A	1800	180.0	20.0	0.0	$3.13	$0.00	$0.00	0.0	0.0
11	Boys Bathroom	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	288.0	2	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	259.2	28.8	0.0	$4.51	$0.00	$0.00	0.0	0.0
54	Room 25	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096.0	30	S 34 W F 1 (MAG)	F41EE	43	1.3	C-OCC	1680	2,167.2	928.8	0.0	$145.30	$202.50	$35.00	1.4	1.2
42	Room 25	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384.0	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	C-OCC	1680	268.8	115.2	0.0	$18.02	$202.50	$35.00	11.2	9.3
54	Room 24	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302.4	32	S 34 W F 1 (MAG)	F41EE	43	1.4	C-OCC	1680	2,311.7	990.7	0.0	$154.99	$202.50	$35.00	1.3	1.1
42	Room 24	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	230.4	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	C-OCC	1680	161.3	69.1	0.0	$10.81	$202.50	$35.00	18.7	15.5
54	Room 32	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302.4	32	S 34 W F 1 (MAG)	F41EE	43	1.4	C-OCC	1680	2,311.7	990.7	0.0	$154.99	$202.50	$35.00	1.3	1.1
42	Room 32	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	230.4	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	C-OCC	1680	161.3	69.1	0.0	$10.81	$202.50	$35.00	18.7	15.5
54	Room 22	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096.0	30	S 34 W F 1 (MAG)	F41EE	43	1.3	C-OCC	1680	2,167.2	928.8	0.0	$145.30	$202.50	$35.00	1.4	1.2
42	Room 22	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384.0	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	C-OCC	1680	268.8	115.2	0.0	$18.02	$202.50	$35.00	11.2	9.3
54	Room 20	33	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,405.6	33	S 34 W F 1 (MAG)	F41EE	43	1.4	C-OCC	1680	2,383.9	1,021.7	0.0	$159.84	$202.50	$35.00	1.3	1.0
42	Room 20	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	153.6	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	C-OCC	1680	107.5	46.1	0.0	$7.21	$202.50	$35.00	28.1	23.2
54	Room 21	28	S 34 W F 1 (MAG)	F41EE	43	1.2	Switch	2400	2,889.6	28	S 34 W F 1 (MAG)	F41EE	43	1.2	C-OCC	1680	2,022.7	866.9	0.0	$135.62	$202.50	$35.00	1.5	1.2
42	Room 21	7	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	537.6	7	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	C-OCC	1680	376.3	161.3	0.0	$25.23	$202.50	$35.00	8.0	6.6
11	Hallways	13	S 34 P F 2 (MAG)	F42EE	72	0.9	Switch	2280	2,134.1	13	S 34 P F 2 (MAG)	F42EE	72	0.9	N/A	2280	2,134.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
164	Exit Signs	2	X 7.0 W I 2	EI10/2	20	0.0	Switch	2280	91.2	2	X 7.0 W I 2	EI10/2	20	0.0	N/A	2280	91.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
11	Stairways	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2280	492.5	3	S 34 P F 2 (MAG)	F42EE	72	0.2	N/A	2280	492.5	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
18	Stairways	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	Switch	2280	255.4	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	N/A	2280	255.4	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
54	Room 11	31	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,199.2	31	S 34 W F 1 (MAG)	F41EE	43	1.3	C-OCC	1680	2,239.4	959.8	0.0	$150.15	$202.50	$35.00	1.3	1.1
42	Room 11	4	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	307.2	4	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	C-OCC	1680	215.0	92.2	0.0	$14.42	$202.50	$35.00	14.0	11.6
54	Room 10	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302.4	32	S 34 W F 1 (MAG)	F41EE	43	1.4	C-OCC	1680	2,311.7	990.7	0.0	$154.99	$202.50	$35.00	1.3	1.1
42	Room 10	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	230.4	3	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	C-OCC	1680	161.3	69.1	0.0	$10.81	$202.50	$35.00	18.7	15.5
164	Exit Signs	2	X 7.0 W I 2	EI10/2	20	0.0	Switch	2280	91.2	2	X 7.0 W I 2	EI10/2	20	0.0	N/A	2280	91.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
11	Hallway	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2280	2,298.2	14	S 34 P F 2 (MAG)	F42EE	72	1.0	N/A	2280	2,298.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
54	Room 12	33	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,405.6	33	S 34 W F 1 (MAG)	F41EE	43	1.4	C-OCC	1680	2,383.9	1,021.7	0.0	$159.84	$202.50	$35.00	1.3	1.0
42	Room 12	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	Switch	2400	153.6	2	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.1	C-OCC	1680	107.5	46.1	0.0	$7.21	$202.50	$35.00	28.1	23.2
54	Room 13	23	S 34 W F 1 (MAG)	F41EE	43	1.0	Switch	2400	2,373.6	23	S 34 W F 1 (MAG)	F41EE	43	1.0	C-OCC	1680	1,661.5	712.1	0.0	$111.40	$202.50	$35.00	1.8	1.5
42	Room 13	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	Switch	2400	921.6	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	C-OCC	1680	645.1	276.5	0.0	$43.25	$202.50	$35.00	4.7	3.9
54	Room 14	29	S 34 W F 1 (MAG)	F41EE	43	1.2	Switch	2400	2,992.8	29	S 34 W F 1 (MAG)	F41EE	43	1.2	C-OCC	1680	2,095.0	897.8	0.0	$140.46	$202.50	$35.00	1.4	1.2
42	Room 14	6	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	460.8	6	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	C-OCC	1680	322.6	138.2	0.0	$21.63	$202.50	$35.00	9.4	7.7
54	Room 15	34	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,508.8	34	S 34 W F 1 (MAG)	F41EE	43	1.5	C-OCC	1680	2,456.2	1,052.6	0.0	$164.68	$202.50	$35.00	1.2	1.0
11	Maintenance Closet	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	C-OCC	250	18.0	54.0	0.0	$8.45	$202.50	$35.00	24.0	19.8
78	Boy's Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800.0	4	EP I 100	I100/1	100	0.4	N/A	1800	720.0	80.0	0.0	$12.52	$0.00	$0.00	0.0	0.0
54	Room 16	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096.0	30	S 34 W F 1 (MAG)	F41EE	43	1.3	C-OCC	1680	2,167.2	928.8	0.0	$145.30	$202.50	$35.00	1.4	1.2
42	Room 16	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384.0	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	C-OCC	1680	268.8	115.2	0.0	$18.02	$202.50	$35.00	11.2	9.3
54	Room 18	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096.0	30	S 34 W F 1 (MAG)	F41EE	43	1.3	C-OCC	1680	2,167.2	928.8	0.0	$145.30	$202.50	$35.00	1.4	1.2
42	Room 18	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	Switch	2400	384.0	5	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.2	C-OCC	1680	268.8	115.2	0.0	$18.02	$202.50	$35.00	11.2	9.3
11	Faculty Room	4	S 34 P F 2 (MAG)	F42EE	72	0.3	Switch	2400	691.2	4	S 34 P F 2 (MAG)	F42EE	72	0.3	OCC	1200	345.6	345.6	0.0	$54.07	$118.75	$20.00	2.2	1.8
78	Faculty Room	1	EP I 100	I100/1	100	0.1	Switch	2400	240.0	1	EP I 100	I100/1	100	0.1	OCC	1200	120.0	120.0	0.0	$18.77	$118.75	$20.00	6.3	5.3
11	Men's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	129.6	14.4	0.0	$2.25	$0.00	$0.00	0.0	0.0
11	Men's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	129.6	14.4	0.0	$2.25	$0.00	$0.00	0.0	0.0
11	Women's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144.0	1	S 34 P F 2 (MAG)	F42EE	72	0.1	N/A	1800	129.6	14.4	0.0	$2.25	$0.00	$0.00	0.0	0.0
54	Women's Bathroom	1	S 34 W F 1 (MAG)	F41EE	43	0.0	Switch	2000	86.0	1	S 34 W F 1 (MAG)	F41EE	43	0.0	N/A	1800	77.4	8.6	0.0	$1.35	$0.00	$0.00	0.0	0.0
78	Girls Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800.0	4	EP I 100	I100/1	100	0.4	N/A	1800	720.0	80.0	0.0	$12.52	$0.00	$0.00	0.0	0.0
42	Room 116	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	Switch	2400	921.6	12	T 32 R F 1 (ELE) 2 Sw./2 Lamp/1 2'x4' Fix.	F41LL	32	0.4	C-OCC	1680	645.1	276.5	0.0	$43.25	$202.50	$35.00	4.7	3.9

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698

Cost of Electricity: **$0.156 $/kWh**

ECM-8 Install Occupancy Sensors

$6.15 $/kW

		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 Without 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 annual 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)	(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
220	Hallway	25	S 17 C F 1(ELE)	F21ILL	20	0.5	Switch	2280	1,140.0	25	S 17 C F 1(ELE)	F21ILL	20	0.5	N/A	2280	1,140.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
13	Dark Room	9	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,296.0	9	S 32 P F 2 (ELE)	F42LL	60	0.5	C-OCC	1680	907.2	388.8	0.0	$60.83	$202.50	$35.00	3.3	2.8
89	Hallway	21	CF 13 2 LAMP	CFQ13/2-L	28	0.6	Switch	2280	1,340.6	21	CF 13 2 LAMP	CFQ13/2-L	28	0.6	N/A	2280	1,340.6	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
204	Solarium	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.8	Switch	2400	1,987.2	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.8	C-OCC	1680	1,391.0	596.2	0.0	$93.27	$202.50	$35.00	2.2	1.8
11	Solarium	10	S 34 P F 2 (MAG)	F42EE	72	0.7	Switch	2400	1,728.0	10	S 34 P F 2 (MAG)	F42EE	72	0.7	C-OCC	1680	1,209.6	518.4	0.0	$81.10	$202.50	$35.00	2.5	2.1
Y	Exterior	4	I 100	I100/1	100	0.4	BR	4368	1,747.2	4	I 100	I100/1	100	0.4	N/A	4368	1,747.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
255	Exterior	3	39W-Rectangular shaped LED floodlight	FXLED39/1	39	0.1	BR	4368	511.1	3	39W-Rectangular shaped LED floodlight	FXLED39/1	39	0.1	N/A	4368	511.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
8	Exterior	6	MH 175	MH175/1	215	1.3	BR	4368	5,634.7	6	MH 175	MH175/1	215	1.3	N/A	4368	5,634.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
94	Exterior	13	SP I 120	I120/1	120	1.6	BR	4368	6,814.1	13	SP I 120	I120/1	120	1.6	N/A	4368	6,814.1	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
231	Exterior	6	WP400MH1	MH400/1	458	2.7	BR	4368	12,003.3	6	WP400MH1	MH400/1	458	2.7	N/A	4368	12,003.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
256	Exterior	4	CFL60W	CFL60/1	60	0.2	BR	4368	1,048.3	4	CFL60W	CFL60/1	60	0.2	N/A	4368	1,048.3	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
	Total	**649**				**54.0**			**117,820**	**649**				**54**			**88,259**	**29,561**	**0**	**4,625**	**$11,006**	**1,885**		
																	Demand Savings			**0.0**	**$0**			
																	kWh Savings			**29,561**	**$4,625**			
																	Total Savings				**$4,625**		**2.4**	**2.0**

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-9 Lighting Replacements with Occupancy Sensors **$6.15 $/kW**

		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 Without 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
191	Cafeteria	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.5	Switch	1600	2,362	12	S 60 C F 2 (ELE) 8'	F82EE	123	1.5	C-OCC	1,200	1,771	590	0.0	$ 92.36	$ 202.50	$ 35	2.2	1.8
13	Boiler Room	6	S 32 P F 2 (ELE)	F42LL	60	0.4	Switch	2400	864	6	0	F42SSILL	48	0.3	OCC	1,200	346	518	0.1	$ 86.41	$ 756.25	$ 80	8.8	7.8
247	Supply Room	1	T 40 R F 3 (MAG)	F43SE	136	0.1	Switch	1000	136	1	T 28 R F 3	F43SSILL	72	0.1	OCC	250	18	118	0.1	$ 23.18	$ 247.00	$ 35	10.7	9.1
191	Supply Room	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.1	Switch	1000	123	1	S 60 C F 2 (ELE) 8'	F82EE	123	0.1	OCC	250	31	92	0.0	$ 14.43	$ 118.75	$ 20	8.2	6.8
13	Stock Room	9	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	1000	540	9	0	F42SSILL	48	0.4	OCC	250	108	432	0.1	$ 75.55	$ 1,075.00	$ 110	14.2	12.8
13	Basement Stairwell	3	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	2280	410	3	0	F42SSILL	48	0.1	N/A	2,280	328	82	0.0	$ 15.50	$ 318.75	$ 30	20.6	18.6
18	Basement Stairwell	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2280	511	2	0	F44SSILL	96	0.2	N/A	2,280	438	73	0.0	$ 13.78	$ 212.50	$ 20	15.4	14.0
254	Room B-5	2	F96T12/HO/ES	F84EHE	414	0.8	Switch	2400	1,987	2	F44SSILL-H	F28T8	131	0.3	C-OCC	1,680	440	1,547	0.6	$ 283.79	$ 202.50	$ 35	0.7	0.6
11	Room B-5	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2400	518	3	C 28 P F 2	F42SSILL	48	0.1	C-OCC	1,680	242	276	0.1	$ 48.57	$ 521.25	$ 65	10.7	9.4
115	Room B-5	3	W 20 C F 2	F22SS	56	0.2	Switch	2400	403	3	W 17 W C 2	F22ILL	33	0.1	C-OCC	1,680	166	237	0.1	$ 42.15	$ 506.25	$ 65	12.0	10.5
13	Room B-5	2	S 32 P F 2 (ELE)	F42LL	60	0.1	Switch	2400	288	2	0	F42SSILL	48	0.1	C-OCC	1,680	161	127	0.0	$ 21.60	$ 415.00	$ 55	19.2	16.7
191	Kitchen	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.5	Switch	1600	787	4	S 60 C F 2 (ELE) 8'	F82EE	123	0.5	OCC	1,200	590	197	0.0	$ 30.79	$ 118.75	$ 20	3.9	3.2
13	Kitchen	4	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	1600	384	4	0	F42SSILL	48	0.2	OCC	1,200	230	154	0.0	$ 27.57	$ 543.75	$ 60	19.7	17.5
78	Kitchen	2	EP I 100	I100/1	100	0.2	Switch	1600	320	2	CF 26	CFQ26/1-L	27	0.1	N/A	1,200	65	255	0.1	$ 50.70	$ 40.50	$ 14	0.8	0.5
11	Hallway	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2280	164	1	C 28 P F 2	F42SSILL	48	0.0	N/A	2,280	109	55	0.0	$ 10.33	$ 106.25	$ 10	10.3	9.3
115	Storage	4	W 20 C F 2	F22SS	56	0.2	Switch	1000	224	4	W 17 W C 2	F22ILL	33	0.1	OCC	250	33	191	0.1	$ 36.67	$ 523.75	$ 60	14.3	12.6
115	Storage	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56	1	W 17 W C 2	F22ILL	33	0.0	OCC	250	8	48	0.0	$ 9.17	$ 220.00	$ 30	24.0	20.7
11	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72	1	C 28 P F 2	F42SSILL	48	0.0	OCC	250	12	60	0.0	$ 11.16	$ 225.00	$ 30	20.2	17.5
11	Girl's Locker Room	8	S 34 P F 2 (MAG)	F42EE	72	0.6	Switch	2800	1,613	8	C 28 P F 2	F42SSILL	48	0.4	N/A	2,000	768	845	0.2	$ 146.33	$ 850.00	$ 80	5.8	5.3
78	Girl's Coaches Office	1	EP I 100	I100/1	100	0.1	Switch	2400	240	1	CF 26	CFQ26/1-L	27	0.0	OCC	1,200	32	208	0.1	$ 37.86	$ 139.00	$ 27	3.7	3.0
78	Gymnasium	90	EP I 100	I100/1	100	9.0	Switch	2912	26,208	90	CF 26	CFQ26/1-L	27	2.4	C-OCC	2,912	7,076	19,132	6.6	$ 3,477.88	$ 2,025.00	$ 665	0.6	0.4
11	Boy's Locker Room	7	S 34 P F 2 (MAG)	F42EE	72	0.5	Switch	2800	1,411	7	C 28 P F 2	F42SSILL	48	0.3	OCC	2,000	672	739	0.2	$ 128.04	$ 862.50	$ 90	6.7	6.0
78	Boy's Locker Room	6	EP I 100	I100/1	100	0.6	Switch	2800	1,680	6	CF 26	CFQ26/1-L	27	0.2	OCC	2,000	324	1,356	0.4	$ 244.46	$ 240.25	$ 62	1.0	0.7
78	Boy's Locker Room Storage	5	EP I 100	I100/1	100	0.5	Switch	1000	500	5	CF 26	CFQ26/1-L	27	0.1	OCC	250	34	466	0.4	$ 99.88	$ 220.00	$ 55	2.2	1.7
78	Storage	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	OCC	250	7	93	0.1	$ 19.98	$ 139.00	$ 27	7.0	5.6
11	Office	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	346	2	C 28 P F 2	F42SSILL	48	0.1	OCC	1,200	115	230	0.0	$ 39.59	$ 331.25	$ 40	8.4	7.4
78	Storage	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	OCC	250	7	93	0.1	$ 19.98	$ 139.00	$ 27	7.0	5.6
11	Storage	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72	1	C 28 P F 2	F42SSILL	48	0.0	OCC	250	12	60	0.0	$ 11.16	$ 225.00	$ 30	20.2	17.5
77	Front Vestibule	2	I 150	I150/1	150	0.3	Switch	2280	684	2	CF 26	CFQ26/1-L	27	0.1	N/A	2,280	123	561	0.2	$ 105.90	$ 13.50	$ -	0.1	0.1
115	Front Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	N/A	1,800	59	53	0.0	$ 9.93	$ 101.25	$ 10	10.2	9.2
247	Room 102	12	T 40 R F 3 (MAG)	F43SE	136	1.6	Switch	2400	3,917	12	T 28 R F 3	F43SSILL	72	0.9	C-OCC	1,680	1,452	2,465	0.8	$ 442.35	$ 1,741.50	$ 215	3.9	3.5
13	Room 103	16	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,304	16	0	F42SSILL	48	0.8	C-OCC	1,680	1,290	1,014	0.2	$ 172.76	$ 1,902.50	$ 195	11.0	9.9
11	Nurse	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	OCC	1,200	58	115	0.0	$ 19.79	$ 225.00	$ 30	11.4	9.9
247	Nurse	8	T 40 R F 3 (MAG)	F43SE	136	1.1	Switch	2400	2,611	8	T 28 R F 3	F43SSILL	72	0.6	OCC	1,200	691	1,920	0.5	$ 338.15	$ 1,144.75	$ 140	3.4	3.0
115	Nurse	2	W 20 C F 2	F22SS	56	0.1	Switch	2400	269	2	W 17 W C 2	F22ILL	33	0.1	OCC	1,200	79	190	0.0	$ 33.06	$ 321.25	$ 40	9.7	8.5
115	Nurse Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	N/A	1,800	59	53	0.0	$ 9.93	$ 101.25	$ 10	10.2	9.2
11	Boy's Bathroom 1st Floor	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	N/A	1,800	86	58	0.0	$ 10.78	$ 106.25	$ 10	9.9	8.9
115	Boy's Bathroom 1st Floor	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	N/A	1,800	59	53	0.0	$ 9.93	$ 101.25	$ 10	10.2	9.2
11	Room 106	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2400	518	3	C 28 P F 2	F42SSILL	48	0.1	C-OCC	1,680	242	276	0.1	$ 48.57	$ 521.25	$ 65	10.7	9.4
X5	Library	8	CF42/1	CF42/1	42	0.3	Switch	2400	806	8	CF42/1	CF42/1	42	0.3	C-OCC	1,680	564	242	0.0	$ 37.85	$ 202.50	$ 35	5.4	4.4
13	Library	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	C-OCC	1,680	968	760	0.1	$ 129.57	$ 1,477.50	$ 155	11.4	10.2
13	Library	17	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,448	17	0	F42SSILL	48	0.8	C-OCC	1,680	1,371	1,077	0.2	$ 183.56	$ 2,008.75	$ 205	10.9	9.8
13	Library	18	S 32 P F 2 (ELE)	F42LL	60	1.1	Switch	2400	2,592	18	0	F42SSILL	48	0.9	C-OCC	1,680	1,452	1,140	0.2	$ 194.36	$ 2,115.00	$ 215	10.9	9.8
13	Library	24	S 32 P F 2 (ELE)	F42LL	60	1.4	Switch	2400	3,456	24	0	F42SSILL	48	1.2	C-OCC	1,680	1,935	1,521	0.3	$ 259.15	$ 2,752.50	$ 275	10.6	9.6
13	Library	22	S 32 P F 2 (ELE)	F42LL	60	1.3	Switch	2400	3,168	22	0	F42SSILL	48	1.1	C-OCC	1,680	1,774	1,394	0.3	$ 237.55	$ 2,540.00	$ 255	10.7	9.6
11	Library Office	4	S 34 P F 2 (MAG)	F42EE	72	0.3	Switch	2400	691	4	C 28 P F 2	F42SSILL	48	0.2	OCC	1,200	230	461	0.1	$ 79.17	$ 543.75	$ 60	6.9	6.1
139	Library	7	SP 40 I	I40/1	40	0.3	Switch	2400	672	7	CF 13	CFQ13/1-L	15	0.1	C-OCC	1,680	176	496	0.2	$ 90.45	$ 486.00	$ 35	5.4	5.0
X5	Library	6	CF42/1	CF42/1	42	0.3	Switch	2400	605	6	0	CF42/1	42	0.3	C-OCC	1,680	423	181	0.0	$ 28.39	$ 202.50	$ 35	7.1	5.9
54	Library Display Case	6	S 34 W F 1 (MAG)	F41EE	43	0.3	Switch	1000	258	6	S 28 W F 1	F41SSILL	26	0.2	OCC	250	39	219	0.1	$ 41.79	$ 118.75	$ 20	2.8	2.4
139	Library	12	SP 40 I	I40/1	40	0.5	Switch	2400	1,152	12	CF 13	CFQ13/1-L	15	0.2	C-OCC	1,680	302	850	0.3	$ 155.05	$ 688.50	$ 35	4.4	4.2
18	Fourier	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	Switch	2280	255	1	0	F44SSILL	96	0.1	OCC	2,280	219	36	0.0	$ 6.89	$ 225.00	$ 30	32.7	28.3
18	Room 107	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	538	2	0	F44SSILL	96	0.2	C-OCC	1,680	323	215	0.0	$ 36.00	$ 415.00	$ 55	11.5	10.0

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-9 Lighting Replacements with Occupancy Sensors **$6.15 $/kW**

		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 Without 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
5	Room 107	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	Switch	2400	432	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.2	C-OCC	1,680	302	130	0.0	$ 20.28	$ 202.50	$ 35	10.0	8.3
13	Room 108	3	S 32 P F 2 (ELE)	F42LL	60	0.2	Switch	2400	432	3	0	F42SSILL	48	0.1	C-OCC	1,680	242	190	0.0	$ 32.39	$ 521.25	$ 65	16.1	14.1
115	Room 108 Bathroom	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	N/A	1,800	59	53	0.0	$ 9.93	$ 101.25	$ 10	10.2	9.2
18	Offices	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	538	2	0	F44SSILL	96	0.2	OCC	1,200	230	307	0.0	$ 50.42	$ 331.25	$ 40	6.6	5.8
78	Closet	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	OCC	250	7	93	0.1	$ 19.98	$ 139.00	$ 27	7.0	5.6
18	Principal	2	T 32 R F 4 (ELE)	F44ILL	112	0.2	Switch	2400	538	2	0	F44SSILL	96	0.2	OCC	1,200	230	307	0.0	$ 50.42	$ 331.25	$ 40	6.6	5.8
13	Offices	6	S 32 P F 2 (ELE)	F42LL	60	0.4	Switch	2400	864	6	0	F42SSILL	48	0.3	OCC	1,200	346	518	0.1	$ 86.41	$ 756.25	$ 80	8.8	7.8
11	Room 109	24	S 34 P F 2 (MAG)	F42EE	72	1.7	Switch	2400	4,147	24	C 28 P F 2	F42SSILL	48	1.2	C-OCC	1,680	1,935	2,212	0.6	$ 388.53	$ 2,752.50	$ 275	7.1	6.4
11	Girl's Bathroom 1st Floor	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2000	432	3	C 28 P F 2	F42SSILL	48	0.1	N/A	1,800	259	173	0.1	$ 32.35	$ 318.75	$ 30	9.9	8.9
78	Auditorium	48	EP I 100	I100/1	100	4.8	Switch	1000	4,800	48	CF 26	CFQ26/1-L	27	1.3	C-OCC	750	972	3,828	3.5	$ 857.44	$ 1,174.50	$ 371	1.4	0.9
78	Auditorium	24	EP I 100	I100/1	100	2.4	Switch	1000	2,400	24	CF 26	CFQ26/1-L	27	0.6	C-OCC	750	486	1,914	1.8	$ 428.72	$ 688.50	$ 203	1.6	1.1
89	Auditorium	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	1000	504	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	C-OCC	750	378	126	0.0	$ 19.71	$ 202.50	$ 35	10.3	8.5
11	Room 112	30	S 34 P F 2 (MAG)	F42EE	72	2.2	Switch	2400	5,184	30	C 28 P F 2	F42SSILL	48	1.4	C-OCC	1,200	1,728	3,456	0.7	$ 593.80	$ 3,390.00	$ 335	5.7	5.1
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	OCC	1,200	58	115	0.0	$ 19.79	$ 225.00	$ 30	11.4	9.9
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	OCC	1,200	58	115	0.0	$ 19.79	$ 225.00	$ 30	11.4	9.9
11	Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	OCC	1,200	58	115	0.0	$ 19.79	$ 225.00	$ 30	11.4	9.9
191	Basement Closet	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1000	246	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	OCC	250	62	185	0.0	$ 28.86	$ 118.75	$ 20	4.1	3.4
11	Basement Closet	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	144	2	C 28 P F 2	F42SSILL	48	0.1	OCC	250	24	120	0.0	$ 22.32	$ 331.25	$ 40	14.8	13.1
191	Basement Closet	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	Switch	1000	246	2	S 60 C F 2 (ELE) 8'	F82EE	123	0.2	OCC	250	62	185	0.0	$ 28.86	$ 118.75	$ 20	4.1	3.4
18	Room 114	12	T 32 R F 4 (ELE)	F44ILL	112	1.3	Switch	2400	3,226	12	0	F44SSILL	96	1.2	C-OCC	1,680	1,935	1,290	0.2	$ 216.02	$ 1,477.50	$ 155	6.8	6.1
142LED	Room 113	6	MH 100	MH100/1	128	0.8	Switch	2400	1,843	6	FXLED39	FXLED39/1	39	0.2	C-OCC	1,680	393	1,450	0.5	$ 266.26	$ 202.50	$ 95	0.8	0.4
11	Room 115	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2400	2,419	14	C 28 P F 2	F42SSILL	48	0.7	C-OCC	1,680	1,129	1,290	0.3	$ 226.64	$ 1,690.00	$ 175	7.5	6.7
11	Room 115	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2400	2,419	14	C 28 P F 2	F42SSILL	48	0.7	C-OCC	1,680	1,129	1,290	0.3	$ 226.64	$ 1,690.00	$ 175	7.5	6.7
247	Room 117	21	T 40 R F 3 (MAG)	F43SE	136	2.9	Switch	2400	6,854	21	T 28 R F 3	F43SSILL	72	1.5	C-OCC	1,680	2,540	4,314	1.3	$ 774.11	$ 2,895.75	$ 350	3.7	3.3
247	Room 117	7	T 40 R F 3 (MAG)	F43SE	136	1.0	Switch	2400	2,285	7	T 28 R F 3	F43SSILL	72	0.5	C-OCC	1,680	847	1,438	0.4	$ 258.04	$ 1,100.25	$ 140	4.3	3.7
247	Room 117	4	T 40 R F 3 (MAG)	F43SE	136	0.5	Switch	2400	1,306	4	T 28 R F 3	F43SSILL	72	0.3	C-OCC	1,680	484	822	0.3	$ 147.45	$ 715.50	$ 95	4.9	4.2
247	Room 117	7	T 40 R F 3 (MAG)	F43SE	136	1.0	Switch	2400	2,285	7	T 28 R F 3	F43SSILL	72	0.5	C-OCC	1,680	847	1,438	0.4	$ 258.04	$ 1,100.25	$ 140	4.3	3.7
247	Room 117	2	T 40 R F 3 (MAG)	F43SE	136	0.3	Switch	2400	653	2	T 28 R F 3	F43SSILL	72	0.1	C-OCC	1,680	242	411	0.1	$ 73.73	$ 459.00	$ 65	6.2	5.3
89	Hallways 2nd Floor	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	Switch	2280	1,149	18	CF 13 2 LAMP	CFQ13/2-L	28	0.5	N/A	2,280	1,149	-	0.0	$ -	$ -	$ -		
201	Room 211	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240	15	0	F43SSILL	72	1.1	C-OCC	1,680	1,814	1,426	0.3	$ 242.95	$ 1,796.25	$ 260	7.4	6.3
201	Room 211 - Office	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.4	Switch	2400	864	4	0	F43SSILL	72	0.3	OCC	1,200	346	518	0.1	$ 86.41	$ 543.75	$ 80	6.3	5.4
201	Room 209	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240	15	0	F43SSILL	72	1.1	C-OCC	1,680	1,814	1,426	0.3	$ 242.95	$ 1,796.25	$ 260	7.4	6.3
201	Room 208	12	T 32 R F 3 (ELE)	F43ILL/2	90	1.1	Switch	2400	2,592	12	0	F43SSILL	72	0.9	C-OCC	1,680	1,452	1,140	0.2	$ 194.36	$ 1,477.50	$ 215	7.6	6.5
11	Girl's Bathroom 2nd Floor	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	N/A	1,800	86	58	0.0	$ 10.78	$ 106.25	$ 10	9.9	8.9
13	Room 206	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	C-OCC	1,680	968	760	0.1	$ 129.57	$ 1,477.50	$ 155	11.4	10.2
13	Room 207	16	S 32 P F 2 (ELE)	F42LL	60	1.0	Switch	2400	2,304	16	0	F42SSILL	48	0.8	C-OCC	1,680	1,290	1,014	0.2	$ 172.76	$ 1,902.50	$ 195	11.0	9.9
11	Boy's Bathroom 2nd Floor	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	N/A	1,800	86	58	0.0	$ 10.78	$ 106.25	$ 10	9.9	8.9
115	Boy's Bathroom 2nd Floor	1	W 20 C F 2	F22SS	56	0.1	Switch	2000	112	1	W 17 W C 2	F22ILL	33	0.0	N/A	1,800	59	53	0.0	$ 9.93	$ 101.25	$ 10	10.2	9.2
201	Room 205	15	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	Switch	2400	3,240	15	0	F43SSILL	72	1.1	C-OCC	1,680	1,814	1,426	0.3	$ 242.95	$ 1,796.25	$ 260	7.4	6.3
11	Room 205 - Office	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2400	173	1	C 28 P F 2	F42SSILL	48	0.0	OCC	1,200	58	115	0.0	$ 19.79	$ 225.00	$ 30	11.4	9.9
13	Room 204	8	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,152	8	0	F42SSILL	48	0.4	C-OCC	1,680	645	507	0.1	$ 86.38	$ 1,052.50	$ 115	12.2	10.9
13	Room 202	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	C-OCC	1,680	968	760	0.1	$ 129.57	$ 1,477.50	$ 155	11.4	10.2
78	Room 202 - Stage	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	C-OCC	750	20	80	0.1	$ 17.86	$ 222.75	$ 42	12.5	10.1
115	Room 202 - Closet	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56	1	W 17 W C 2	F22ILL	33	0.0	OCC	250	8	48	0.0	$ 9.17	$ 220.00	$ 30	24.0	20.7
115	Room 202 - Closet	1	W 20 C F 2	F22SS	56	0.1	Switch	1000	56	1	W 17 W C 2	F22ILL	33	0.0	OCC	250	8	48	0.0	$ 9.17	$ 220.00	$ 30	24.0	20.7
13	Room 203	8	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,152	8	0	F42SSILL	48	0.4	C-OCC	1,680	645	507	0.1	$ 86.38	$ 1,052.50	$ 115	12.2	10.9
13	Room 201	12	S 32 P F 2 (ELE)	F42LL	60	0.7	Switch	2400	1,728	12	0	F42SSILL	48	0.6	C-OCC	1,680	968	760	0.1	$ 129.57	$ 1,477.50	$ 155	11.4	10.2
13	Storage	1	S 32 P F 2 (ELE)	F42LL	60	0.1	Switch	1000	60	1	0	F42SSILL	48	0.0	OCC	250	12	48	0.0	$ 8.39	$ 225.00	$ 30	26.8	23.2
115	Stair Case	1	W 20 C F 2	F22SS	56	0.1	Switch	2280	128	1	W 17 W C 2	F22ILL	33	0.0	N/A	2,280	75	52	0.0	$ 9.90	$ 101.25	$ 10	10.2	9.2
208	Stair Case	1	SP 26 R CF 2	CFQ25/2	66	0.1	Switch	2280	150	1	SP 26 R CF 2	CFQ25/2	66	0.1	N/A	2,280	150	-	0.0	$ -	$ -	$ -		
18	Stair Case	4	T 32 R F 4 (ELE)	F44ILL	112	0.4	Switch	2280	1,021	4	0	F44SSILL	96	0.4	N/A	2,280	876	146	0.1	$ 27.55	$ 425.00	$ 40	15.4	14.0
6	Math Office	2	T 34 R F 4 (MAG)	F44EE	144	0.3	Switch	2400	691	2	T 28 R F 4	F44SSILL	96	0.2	OCC	1,200	230	461	0.1	$ 79.17	$ 381.25	$ 40	4.8	4.3
78	Attic	15	EP I 100	I100/1	100	1.5	Switch	1000	1,500	15	CF 26	CFQ26/1-L	27	0.4	N/A	250	101	1,399	1.1	$ 299.63	$ 303.75	$ 105	1.0	0.7
164	Exit Signs	9	X 7.0 W I 2	EI10/2	20	0.2	Switch	2280	410	9	X 1.5C LED	ELED1.5/1	1.5	0.0	N/A	2,280	31	380	0.2	$ 71.68	$ 1,154.25	$ -	16.1	16.1
54	Room 27	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612	35	S 28 W F 1	F41SSILL	26	0.9	C-OCC	1,680	1,529	2,083	0.6	$ 369.81	$ 202.50	$ 35	0.5	0.5
54	Room 28	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612	35	S 28 W F 1	F41SSILL	26	0.9	C-OCC	1,680	1,529	2,083	0.6	$ 369.81	$ 202.50	$ 35	0.5	0.5

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-9 Lighting Replacements with Occupancy Sensors **$6.15 $/kW**

		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 Without 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
11	Room 25A	6	S 34 P F 2 (MAG)	F42EE	72	0.4	Switch	2400	1,037	6	C 28 P F 2	F42SSILL	48	0.3	C-OCC	1,680	484	553	0.1	$ 97.13	$ 840.00	$ 95	8.6	7.7
54	Room 26	35	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,612	35	S 28 W F 1	F41SSILL	26	0.9	C-OCC	1,680	1,529	2,083	0.6	$ 369.81	$ 202.50	$ 35	0.5	0.5
78	Girl's Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800	4	CF 26	CFQ26/1-L	27	0.1	N/A	1,800	194	606	0.3	$ 116.29	$ 81.00	$ 28	0.7	0.5
78	Maintenance Closet	1	EP I 100	I100/1	100	0.1	Switch	1000	100	1	CF 26	CFQ26/1-L	27	0.0	OCC	250	7	93	0.1	$ 19.98	$ 139.00	$ 27	7.0	5.6
78	Boys Bathroom	1	EP I 100	I100/1	100	0.1	Switch	2000	200	1	CF 26	CFQ26/1-L	27	0.0	N/A	1,800	49	151	0.1	$ 29.07	$ 20.25	$ 7	0.7	0.5
11	Boys Bathroom	2	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	288	2	C 28 P F 2	F42SSILL	48	0.1	N/A	1,800	173	115	0.0	$ 21.56	$ 212.50	$ 20	9.9	8.9
54	Room 25	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,310	1,786	0.5	$ 316.98	$ 202.50	$ 35	0.6	0.5
42	Room 25	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.2	C-OCC	1,680	269	115	0.0	$ 18.02	$ 202.50	$ 35	11.2	9.3
54	Room 24	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302	32	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,398	1,905	0.5	$ 338.11	$ 202.50	$ 35	0.6	0.5
42	Room 24	3	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.1	Switch	2400	230	3	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.1	C-OCC	1,680	161	69	0.0	$ 10.81	$ 202.50	$ 35	18.7	15.5
54	Room 32	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302	32	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,398	1,905	0.5	$ 338.11	$ 202.50	$ 35	0.6	0.5
42	Room 32	3	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.1	Switch	2400	230	3	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.1	C-OCC	1,680	161	69	0.0	$ 10.81	$ 202.50	$ 35	18.7	15.5
54	Room 22	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,310	1,786	0.5	$ 316.98	$ 202.50	$ 35	0.6	0.5
42	Room 22	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.2	C-OCC	1,680	269	115	0.0	$ 18.02	$ 202.50	$ 35	11.2	9.3
54	Room 20	33	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,406	33	S 28 W F 1	F41SSILL	26	0.9	C-OCC	1,680	1,441	1,964	0.6	$ 348.68	$ 202.50	$ 35	0.6	0.5
42	Room 20	2	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.1	Switch	2400	154	2	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.1	C-OCC	1,680	108	46	0.0	$ 7.21	$ 202.50	$ 35	28.1	23.2
54	Room 21	28	S 34 W F 1 (MAG)	F41EE	43	1.2	Switch	2400	2,890	28	S 28 W F 1	F41SSILL	26	0.7	C-OCC	1,680	1,223	1,667	0.5	$ 295.85	$ 202.50	$ 35	0.7	0.6
42	Room 21	7	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.2	Switch	2400	538	7	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.2	C-OCC	1,680	376	161	0.0	$ 25.23	$ 202.50	$ 35	8.0	6.6
11	Hallways	13	S 34 P F 2 (MAG)	F42EE	72	0.9	Switch	2280	2,134	13	C 28 P F 2	F42SSILL	48	0.6	N/A	2,280	1,423	711	0.3	$ 134.31	$ 1,381.25	$ 130	10.3	9.3
164	Exit Signs	2	X 7.0 W I 2	EI10/2	20	0.0	Switch	2280	91	2	X 1.5C LED	ELED1.5/1	1.5	0.0	N/A	2,280	7	84	0.0	$ 15.93	$ 256.50	$ -	16.1	16.1
11	Stairways	3	S 34 P F 2 (MAG)	F42EE	72	0.2	Switch	2280	492	3	C 28 P F 2	F42SSILL	48	0.1	N/A	2,280	328	164	0.1	$ 30.99	$ 318.75	$ 30	10.3	9.3
18	Stairways	1	T 32 R F 4 (ELE)	F44ILL	112	0.1	Switch	2280	255	1	0	F44SSILL	96	0.1	N/A	2,280	219	36	0.0	$ 6.89	$ 106.25	$ 10	15.4	14.0
54	Room 11	31	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,199	31	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,354	1,845	0.5	$ 327.55	$ 202.50	$ 35	0.6	0.5
42	Room 11	4	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.1	Switch	2400	307	4	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.1	C-OCC	1,680	215	92	0.0	$ 14.42	$ 202.50	$ 35	14.0	11.6
54	Room 10	32	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,302	32	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,398	1,905	0.5	$ 338.11	$ 202.50	$ 35	0.6	0.5
42	Room 10	3	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.1	Switch	2400	230	3	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.1	C-OCC	1,680	161	69	0.0	$ 10.81	$ 202.50	$ 35	18.7	15.5
164	Exit Signs	2	X 7.0 W I 2	EI10/2	20	0.0	Switch	2280	91	2	X 1.5C LED	ELED1.5/1	1.5	0.0	N/A	2,280	7	84	0.0	$ 15.93	$ 256.50	$ -	16.1	16.1
11	Hallway	14	S 34 P F 2 (MAG)	F42EE	72	1.0	Switch	2280	2,298	14	C 28 P F 2	F42SSILL	48	0.7	N/A	2,280	1,532	766	0.3	$ 144.64	$ 1,487.50	$ 140	10.3	9.3
54	Room 12	33	S 34 W F 1 (MAG)	F41EE	43	1.4	Switch	2400	3,406	33	S 28 W F 1	F41SSILL	26	0.9	C-OCC	1,680	1,441	1,964	0.6	$ 348.68	$ 202.50	$ 35	0.6	0.5
42	Room 12	2	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.1	Switch	2400	154	2	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.1	C-OCC	1,680	108	46	0.0	$ 7.21	$ 202.50	$ 35	28.1	23.2
54	Room 13	23	S 34 W F 1 (MAG)	F41EE	43	1.0	Switch	2400	2,374	23	S 28 W F 1	F41SSILL	26	0.6	C-OCC	1,680	1,005	1,369	0.4	$ 243.02	$ 202.50	$ 35	0.8	0.7
42	Room 13	12	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.4	Switch	2400	922	12	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.4	C-OCC	1,680	645	276	0.0	$ 43.25	$ 202.50	$ 35	4.7	3.9
54	Room 14	29	S 34 W F 1 (MAG)	F41EE	43	1.2	Switch	2400	2,993	29	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,267	1,726	0.5	$ 306.41	$ 202.50	$ 35	0.7	0.5
42	Room 14	6	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.2	Switch	2400	461	6	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.2	C-OCC	1,680	323	138	0.0	$ 21.63	$ 202.50	$ 35	9.4	7.7
54	Room 15	34	S 34 W F 1 (MAG)	F41EE	43	1.5	Switch	2400	3,509	34	S 28 W F 1	F41SSILL	26	0.9	C-OCC	1,680	1,485	2,024	0.6	$ 359.24	$ 202.50	$ 35	0.6	0.5
11	Maintenance Closet	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	1000	72	1	C 28 P F 2	F42SSILL	48	0.0	C-OCC	250	12	60	0.0	$ 11.16	$ 308.75	$ 45	27.7	23.6
78	Boy's Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800	4	CF 26	CFQ26/1-L	27	0.1	N/A	1,800	194	606	0.3	$ 116.29	$ 81.00	$ 28	0.7	0.5
54	Room 16	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,310	1,786	0.5	$ 316.98	$ 202.50	$ 35	0.6	0.5
42	Room 16	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.2	C-OCC	1,680	269	115	0.0	$ 18.02	$ 202.50	$ 35	11.2	9.3
54	Room 18	30	S 34 W F 1 (MAG)	F41EE	43	1.3	Switch	2400	3,096	30	S 28 W F 1	F41SSILL	26	0.8	C-OCC	1,680	1,310	1,786	0.5	$ 316.98	$ 202.50	$ 35	0.6	0.5
42	Room 18	5	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.2	Switch	2400	384	5	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.2	C-OCC	1,680	269	115	0.0	$ 18.02	$ 202.50	$ 35	11.2	9.3
11	Faculty Room	4	S 34 P F 2 (MAG)	F42EE	72	0.3	Switch	2400	691	4	C 28 P F 2	F42SSILL	48	0.2	OCC	1,200	230	461	0.1	$ 79.17	$ 543.75	$ 60	6.9	6.1
78	Faculty Room	1	EP I 100	I100/1	100	0.1	Switch	2400	240	1	CF 26	CFQ26/1-L	27	0.0	OCC	1,200	32	208	0.1	$ 37.86	$ 139.00	$ 27	3.7	3.0
11	Men's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	N/A	1,800	86	58	0.0	$ 10.78	$ 106.25	$ 10	9.9	8.9
11	Men's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	N/A	1,800	86	58	0.0	$ 10.78	$ 106.25	$ 10	9.9	8.9
11	Women's Bathroom	1	S 34 P F 2 (MAG)	F42EE	72	0.1	Switch	2000	144	1	C 28 P F 2	F42SSILL	48	0.0	N/A	1,800	86	58	0.0	$ 10.78	$ 106.25	$ 10	9.9	8.9
54	Women's Bathroom	1	S 34 W F 1 (MAG)	F41EE	43	0.0	Switch	2000	86	1	S 28 W F 1	F41SSILL	26	0.0	N/A	1,800	47	39	0.0	$ 7.39	$ -	$ -	0.0	0.0
78	Girls Bathroom	4	EP I 100	I100/1	100	0.4	Switch	2000	800	4	CF 26	CFQ26/1-L	27	0.1	N/A	1,800	194	606	0.3	$ 116.29	$ 81.00	$ 28	0.7	0.5
42	Room 116	12	T 32 R F 1 (ELE) 2 Sw./2	F41LL	32	0.4	Switch	2400	922	12	T 32 R F 1 (ELE) 2 Sw.	F41LL	32	0.4	C-OCC	1,680	645	276	0.0	$ 43.25	$ 202.50	$ 35	4.7	3.9
220	Hallway	25	S 17 C F 1(ELE)	F21ILL	20	0.5	Switch	2280	1,140	25	S 17 C F 1(ELE)	F21ILL	20	0.5	N/A	2,280	1,140	-	0.0	$ -	$ -	$ -		
13	Dark Room	9	S 32 P F 2 (ELE)	F42LL	60	0.5	Switch	2400	1,296	9	0	F42SSILL	48	0.4	C-OCC	1,680	726	570	0.1	$ 97.18	$ 1,158.75	$ 125	11.9	10.6
89	Hallway	21	CF 13 2 LAMP	CFQ13/2-L	28	0.6	Switch	2280	1,341	21	CF 13 2 LAMP	CFQ13/2-L	28	0.6	N/A	2,280	1,341	-	0.0	$ -	$ -	$ -		
204	Solarium	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.8	Switch	2400	1,987	4	S 96 P F 2 (MAG) 8'	F82EHE	207	0.8	C-OCC	1,680	1,391	596	0.0	$ 93.27	$ 202.50	$ 35	2.2	1.8
11	Solarium	10	S 34 P F 2 (MAG)	F42EE	72	0.7	Switch	2400	1,728	10	C 28 P F 2	F42SSILL	48	0.5	C-OCC	1,680	806	922	0.2	$ 161.89	$ 1,265.00	$ 135	7.8	7.0
Y	Exterior	4	I 100	I100/1	100	0.4	BR	4368	1,747	4	CF 26	CFQ26/1-L	27	0.1	N/A	4,368	472	1,275	0.3	$ 221.08	$ 162.00	$ -	0.7	0.7
255	Exterior	3	39W-Rectangular shaped	FXLED39/1	39	0.1	BR	4368	511	3	39W-Rectangular shap	FXLED39/1	39	0.1	N/A	4,368	511	-	0.0	$ -	$ -	$ -		

Energy Audit of NJBPU - Pompton Lakes - Lincoln Elementary School

CHA Project No. 24698 **Cost of Electricity: $0.156 $/kWh**

ECM-9 Lighting Replacements with Occupancy Sensors **$6.15 $/kW**

		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 Without 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
8	Exterior	6	MH 175	MH175/1	215	1.3	BR	4368	5,635	6	FXLED39	FXLED39/1	39	0.2	N/A	4,368	1,022	4,613	1.1	$ 799.54	$ 2,875.50	$ 60	3.6	3.5
94	Exterior	13	SP I 120	I120/1	120	1.6	BR	4368	6,814	13	CF 26	CFQ26/1-L	27	0.4	N/A	4,368	1,533	5,281	1.2	$ 915.38	$ 526.50	$ -	0.6	0.6
231	Exterior	6	WP400MH1	MH400/1	458	2.7	BR	4368	12,003	6	WP400MH1	MH400/1	458	2.7	N/A	4,368	12,003	-	0.0	$ -	$ -	$ -		
256	Exterior	4	CFL60W	CFL60/1	60	0.2	BR	4368	1,048	4	CFL60W	CFL60/1	60	0.2	N/A	4,368	1,048	-	0.0	$ -	$ -	$ -		
	Total	**649**				**54.0**			**117,820**	**649**				**29.8**			**46,311**		**24.2**	**12,977**	**55,064**	**$7,118**		
																		Demand Savings		**24.2**	**$1,789**			
																		kWh Savings		**71,509**	**$11,187**			
																		Total Savings			**$12,977**		**4.2**	**3.7**

APPENDIX D

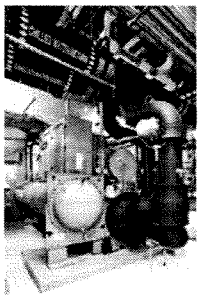
New Jersey Pay For Performance Incentive Program

Pay for Performance - Existing Buildings

Download program applications and incentive forms.

The Greater the Savings, the Greater Your Incentives

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



Eligibility

Existing commercial, industrial and institutional buildings with a peak demand over 100 kW for any of the preceding twelve months are eligible to participate including hotels and casinos, large office buildings, multi-family buildings, supermarkets, manufacturing facilities, schools, shopping malls and restaurants. Buildings that fall into the following five customer classes are not required to meet the 100 kW demand in order to participate in the program: hospitals, public colleges and universities, 501(c)(3) non-profits, affordable multifamily housing, and local governmental entities. Your energy reduction plan must 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, manufacturing, water treatment and datacenter building types whose annual energy consumption is heavily weighted on process loads. Details are available in the high energy intensity section of the FAQ 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 in your facilities and comparing it to similar buildings. That can be a big help in locating opportunities for cost-justified energy efficiency upgrades. And, based on our findings, you may be invited to participate in the Building Performance with ENERGY STAR initiative and receive special recognition as an industry leader in energy efficiency.

Incentives

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

Incentive #1 - Submittal of complete energy reduction plan prepared by an approved program partner - Contingent on moving forward, incentives will be between $5,000 and $50,000 based on approximately $.10 per square foot, not to exceed 50% of the facility's 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 paid based on actual savings, provided that the minimum performance threshold of 15% savings has been achieved.

CONTACT US

A detailed Incentive Structure document is available on the applications and forms page.

Energy Efficiency Revolving Loan Fund (EE RLF)

New Jersey-based commercial, institutional or industrial entities (including 501(c)(3) organizations) that have received an approved energy reduction plan under Pay for Performance may be eligible for supplemental financing through the EE RLF. The financing, in the form of low-interest loans, can be used to support up to 80% of total eligible project costs, not to exceed $2.5 million or 100% of total eligible project costs from all public state funding sources. Visit the NJ EDA website for details.

Steps to Participation

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

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

New Jersey SmartStart BUILDINGS®

BPU

2012 PAY FOR PERFORMANCE PROGRAM
Existing Buildings Incentive Structure

Incentive #1: Energy Reduction Plan

Incentive Amount: ..... $0.10 per sq ft
Minimum Incentive: $5,000
Maximum Incentive:: ..... $50,000 or 50% of facility annual energy cost (whichever is less)

This incentive is designed to offset the cost of services associated with the development of the Energy Reduction Plan (ERP) and is paid upon ERP approval. Incentive is contingent on implementation of recommended measures outlined in the ERP.

Incentive #2: Installation of Recommended Measures

Minimum Performance Target: 15%

Electric Incentives

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 per projected kWh saved

Gas Incentives

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

This incentive is based on projected energy savings outlined in the ERP. Incentive is paid upon successful installation of recommended measures.

Incentive #3: Post-Construction Benchmarking Report

Minimum Performance Target: 15%

Electric Incentives

Base Incentive based on 15% savings: ..... $0.09 per actual kWh saved
For each % over 15% add: ..... $0.005 per actual kWh saved
Maximum Incentive: ..... $0.11 per actual kWh saved

Gas Incentives

Base Incentive based on 15% savings: ..... $0.90 per actual Therm saved
For each % over 15% add: ..... $0.05 per actual Therm saved
Maximum Incentive: ..... $1.25 per actual Therm saved

Incentive Cap: ..... 25% of total project cost

This incentive will be released upon submittal of a Post-Construction Benchmarking Report that verifies that the level of savings actually achieved by the installed measures meets or exceeds the minimum performance threshold. To validate the savings and achievement of the Energy Target, the EPA Portfolio Manager shall be used. Savings should be rounded to the nearest percent. Total value of Incentive #2 and Incentive #3 may not exceed 50% of the total project cost. Incentives will be limited to $1 million per gas and electric account per building; maximum of $2 million per project. See Participation Agreement for details.

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.
Values used in this calculation are for measures with a positive return on investment (ROI) only.

Total Building Area (Square Feet)	58,555
Is this audit funded by NJ BPU (Y/N)	Yes

Board of Public Utilites (BPU)

Incentive #1		
Audit is funded by NJ BPU	$0.10	$/sqft

	Annual Utilities	
	kWh	Therms
Existing Cost (from utility)	$129,574	$43,519
Existing Usage (from utility)	828,247	48,104
Proposed Savings	96,061	54,102
Existing Total MMBtus	7,637	
Proposed Savings MMBtus	5,738	
% Energy Reduction	**75.1%**	
Proposed Annual Savings	$71,700	

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

	Incentives $		
	Elec	Gas	Total
Incentive #1	$0	$0	$5,856
Incentive #2	$10,567	$67,627	$78,194
Incentive #3	$10,567	$67,627	$78,194
Total All Incentives	**$21,133**	**$135,255**	**$162,244**

Total Project Cost	$144,719

		Allowable Incentive
% Incentives #1 of Utility Cost*	3.4%	$5,856
% Incentives #2 of Project Cost**	54.0%	$36,180
% Incentives #3 of Project Cost**	54.0%	$36,180
Total Eligible Incentives***	**$78,215**	
Project Cost w/ Incentives	$66,504	

Project Payback (years)	
w/o Incentives	w/ Incentives
2.0	0.9

* 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

APPENDIX E

Energy Savings Improvement Plans (ESIP)

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

- PROGRAMS
  - NJ SMARTSTART BUILDINGS
  - PAY FOR PERFORMANCE
  - COMBINED HEAT & POWER AND FUEL CELLS
  - LOCAL GOVERNMENT ENERGY AUDIT
  - LARGE ENERGY USERS PILOT
  - ENERGY SAVINGS IMPROVEMENT PLAN
  - DIRECT INSTALL
  - ENERGY BENCHMARKING
  - T-12 SCHOOLS LIGHTING INITIATIVE
  - OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS
  - EDA PROGRAMS
  - TEACH
  - ARRA
- TECHNOLOGIES
- TOOLS AND RESOURCES
- PROGRAM UPDATES
- CONTACT US

Home » Commercial & Industrial » Programs

Energy Savings Improvement Plan

A new State law 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 "Energy Savings Improvement Program" (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.

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

- Local Government
- School Districts (K-12)

The Board also adopted protocols to measure energy savings.

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. Local units considering an ESIP should carefully review the Local Finance Notice, the law, and consult with qualified professionals to determine how they should approach the task.

FIRST STEP – ENERGY AUDIT

For local governments interested in pursuing an ESIP, the first step is to perform an energy audit. As explained in the Local Finance Notice, this may be done internally if an agency has qualified staff to conduct the audit. If not, the audit must be implemented by an independent contractor and not by the energy savings company producing the Energy Reduction Plan.

Pursuing a Local Government Energy Audit through New Jersey's Clean Energy Program is a valuable first step to the ESIP approach - and it's free. **Incentives provide 100% of the cost of the audit.**

ENERGY REDUCTION PLANS

If you have an ESIP plan you would like to submit to the Board of Public Utilities, please email it 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)*

Program Updates

- Board Order - Standby Charges for Distributed Generation Customers
- T-12 Schools Lighting Replacement Initiative - Funding Allocation Reached

Other updates posted.

APPENDIX F

Photovoltaic (PV) Rooftop Solar Power Generation

Pompton Lakes Public Schools
Pompton Lakes High School

Cost of Electricity	$ 0.16	/kWh
Electricity Usage	828,247	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
$480,000	**120.0**	**156,400**	**0**	**$24,398**	**0**	**$24,398**	**$0**	**$9,384**	**19.7**	**14.2**

** Estimated Solar Renewable Energy Certificate Program (SREC) SREC for 15 Years= $60 /1000kwh

Area Output*
3,143 m2
33,836 ft2

Perimeter Output*
458 m
1,504 ft

Available Roof Space for PV:
(Area Output - 10 ft x Perimeter) x 85%
15,976 ft2

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

8	watt/ft2	
127,806	DC watts	
120	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	8069	Enter into PV Watts
DC/AC Derate Factor	0.83	Enter info PV Watts

PV Watts Output
156,400 annual kWh calculated in PV Watts program

% Offset Calc

Usage	828,247	(from utilities)
PV Generation	156,400	(generated using PV Watts)
% offset	19%	

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

PVWatts * * * * *

AC Energy & Cost Savings

* * * * *

Cautions for Interpreting the Results

Pompton Lakes High School

Station Identification

Cell ID:	0268370
State:	New Jersey
Latitude:	40.9 ° N
Longitude:	74.2 ° W

PV System Specifications

DC Rating:	120.0 kW
DC to AC Derate Factor:	0.830
AC Rating:	99.6 kW
Array Type:	Fixed Tilt
Array Tilt:	20.0 °
Array Azimuth:	180.0 °

Energy Specifications

Cost of Electricity:	15.6 ¢/kWh

Results

Month	Solar Radiation (kWh/m²/day)	AC Energy (kWh)	Energy Value ($)
1	2.65	8383	1307.75
2	3.47	9929	1548.92
3	4.83	14735	2298.66
4	5.28	15104	2356.22
5	5.93	17232	2688.19
6	6.32	17303	2699.27
7	5.87	16286	2540.62
8	5.55	15505	2418.78
9	5.04	13878	2164.97
10	4.14	12204	1903.82
11	2.82	8196	1278.58
12	2.46	7645	1192.62
Year	4.54	156400	24398.40

Output Hourly Performance Data

(Gridded data is monthly, hourly output not available.)

Output Results as Text

Saving Text from a Browser

Run PVWATTS v.2 for another location

Run PVWATTS v.1

Please send questions and comments to Webmaster

Disclaimer and copyright notice.

RReDC home page (*http://rredc.nrel.gov*)

APPENDIX G

EPA Portfolio Manager

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Pompton Lakes High School

Building ID: 3310413
For 12-month Period Ending: August 31, 2012[1]
Date SEP becomes ineligible: N/A

Date SEP Generated: October 26, 2012

Facility
Pompton Lakes High School
44 Lakeside Avenue
Pompton Lakes, NJ 07442

Facility Owner
N/A

Primary Contact for this Facility
N/A

Year Built: 1931
Gross Floor Area (ft²): 58,555

Energy Performance Rating[2] (1-100) 4

Site Energy Use Summary[3]

Electricity - Grid Purchase(kBtu)	2,825,979
Natural Gas (kBtu)[4]	4,786,700
Total Energy (kBtu)	7,612,679

Energy Intensity[4]

Site (kBtu/ft²/yr)	130
Source (kBtu/ft²/yr)	247

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	655

Electric Distribution Utility
Jersey Central Power & Light Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	74
National Median Source EUI	140
% Difference from National Median Source EUI	76%
Building Type	K-12 School

Stamp of Certifying Professional

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

Certifying Professional
N/A

Meets Industry Standards[5] **for Indoor Environmental Conditions:**

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

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

ENERGY STAR® Data Checklist for Commercial Buildings

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

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.
NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Building Name	Pompton Lakes High School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	K-12 School	Is this an accurate description of the space in question?		☐
Location	44 Lakeside Avenue, Pompton Lakes, NJ 07442	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.		☐
Pompton Lakes High School (K-12 School)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑
Gross Floor Area	58,555 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		☐
Open Weekends?	No	Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days.		☐
Number of PCs	150	Is this the number of personal computers in the K12 School?		☐
Number of walk-in refrigeration/freezer units	0	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		☐
Presence of cooking facilities	Yes	Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is “no“.		☐
Percent Cooled	30 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Months	10(Optional)	Is this school in operation for at least 8 months of the year?		☐

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

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

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

Fuel Type: Electricity

Meter: Electric Meter (kWh (thousand Watt-hours))
Space(s): Entire Facility
Generation Method: Grid Purchase

Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
08/01/2012	08/31/2012	73,989.00
07/01/2012	07/31/2012	33,247.00
06/01/2012	06/30/2012	45,108.00
05/01/2012	05/31/2012	56,968.00
04/01/2012	04/30/2012	55,519.00
03/01/2012	03/31/2012	98,120.00
02/01/2012	02/29/2012	107,000.00
01/01/2012	01/31/2012	90,720.00
12/01/2011	12/31/2011	68,925.00
11/01/2011	11/30/2011	96,678.00
10/01/2011	10/31/2011	50,853.00
09/01/2011	09/30/2011	51,120.00

Electric Meter Consumption (kWh (thousand Watt-hours))	**828,247.00**
Electric Meter Consumption (kBtu (thousand Btu))	**2,825,978.76**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))	**2,825,978.76**
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?	☐

Fuel Type: Natural Gas

Meter: Natural Gas (therms)
Space(s): Entire Facility

Start Date	End Date	Energy Use (therms)
08/01/2012	08/31/2012	208.00
07/01/2012	07/31/2012	243.00
06/01/2012	06/30/2012	306.00
05/01/2012	05/31/2012	439.00
04/01/2012	04/30/2012	3,423.00
03/01/2012	03/31/2012	4,218.00
02/01/2012	02/29/2012	8,793.00
01/01/2012	01/31/2012	10,293.00
12/01/2011	12/31/2011	9,665.00
11/01/2011	11/30/2011	6,461.00

10/01/2011	10/31/2011	3,257.00
09/01/2011	09/30/2011	561.00
ural Gas Consumption (therms)		**47,867.00**
Natural Gas Consumption (kBtu (thousand Btu))		**4,786,700.00**
Total Natural Gas Consumption (kBtu (thousand Btu))		**4,786,700.00**
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		☐

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

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

Certifying Professional

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

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

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

Facility
Pompton Lakes High School
44 Lakeside Avenue
Pompton Lakes, NJ 07442

Facility Owner
N/A

Primary Contact for this Facility
N/A

General Information

Pompton Lakes High School	
Gross Floor Area Excluding Parking: (ft²)	58,555
Year Built	1931
For 12-month Evaluation Period Ending Date:	August 31, 2012

Facility Space Use Summary

Pompton Lakes High School	
Space Type	K-12 School
Gross Floor Area (ft²)	58,555
Open Weekends?	No
Number of PCs	150
Number of walk-in refrigeration/freezer units	0
Presence of cooking facilities	Yes
Percent Cooled	30
Percent Heated	100
Months ◦	10
High School?	Yes
School District ◦	Pompton Lakes

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 08/31/2012)	**Baseline** (Ending Date 08/31/2012)	**Rating of 75**	**Target**	**National Median**
Energy Performance Rating	4	4	75	N/A	50
Energy Intensity					
Site (kBtu/ft²)	130	130	58	N/A	74
Source (kBtu/ft²)	247	247	110	N/A	140
Energy Cost					
$/year	$ 173,372.88	$ 173,372.88	$ 76,931.63	N/A	$ 98,374.87
$/ft²/year	$ 2.96	$ 2.96	$ 1.31	N/A	$ 1.68
Greenhouse Gas Emissions					
$MtCO_2e$/year	655	655	291	N/A	372
$kgCO_2e/ft^2$/year	11	11	5	N/A	6

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

Notes:
o - This attribute is optional.
d - A default value has been supplied by Portfolio Manager.