#### **CARTERET BOARD OF EDUCATION**

#### **CARTERET HIGH SCHOOL**

199 Washington Avenue, Carteret, NJ 07008

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

June 2015

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**CHA PROJECT NO. 30201** 

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#### REPORT DISCLAIMER

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

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

#### **List of Common Energy Audit Abbreviations**

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

#### 1.0 EXECUTIVE SUMMARY

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

Building Name	Address	Square Feet	Construction Date
Carteret High School	199 Washington Avenue, Carteret, NJ 07008	166,918	1926

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

Building Name	Electric Savings (kWh)	NG Savings (therms)	Total Savings (\$)	Payback (years)
Carteret High School	265,876	13,515	42,314	23.3

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

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

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

#### **Summary of Energy Conservation Measures**

ECM #	Energy Conservation Measure	Est. Costs (\$)	Est. Savings (\$/year)	Payback w/o Incentive	Potential Incentive (\$)*	Payback w/ Incentive	Recommended
1	Increase Attic Insulation to R-38	117,464	5,628	20.9	0	20.9	Υ
2	Replace Door Sweeps & Seals	1,244	26	47.0	0	47.0	Υ
3	Steam to Hot Water Conversion	4,302,457	16,168	266.1	2,000	266.0	N
4	Eliminate HW Generator & Install Condensing Boiler	317,043	10,031	31.6	1,500	31.5	Υ
5	Install VFDs on Hot Water Pumps	11,618	237	49.0	0	49.0	Υ
6	Replace Stadium DHW Heaters with Condensing	17,696	2,279	7.8	600	7.5	Υ
7	Walk in Freezer Controls	22,275	1,335	16.7	200	16.5	Υ
L1**	Lighting Replacements	447,609	19,562	22.9	27,460	21.5	N
L2**	Lighting Controls	51,300	5,708	9.0	3,800	8.3	N
L3 Lighting Replacements with Controls		498,909	22,778	21.9	31,260	20.5	Υ
	Total**	5,288,706	58,482	90.4	35,560	89.8	
	Total (Recommended)	986,249	42,314	23.3	33,560	22.5	

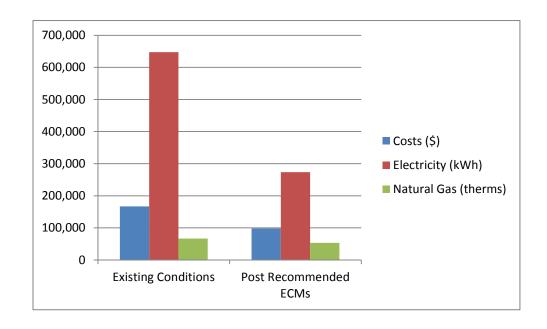
The alternative energy measure Solar PV Electricity Generation is not recommended due to the fact that there is insufficient available roof space for the PV panels.

<sup>\*</sup> Incentive shown is per the New Jersey SmartStart Program.

\*\* These ECMs are not included in the Total, as they are alternate measures not recommended.

If the Carteret Board of Education implements the recommended ECMs, energy savings would be as follows:

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs (\$)	166,990	124,676	25%
Electricity (kWh)	647,566	381,690	41%
Natural Gas (therms)	66,851	53,336	20%
Site EUI (kbtu/SF/Yr)	53.3	39.8	



#### 2.0 BUILDING INFORMATION AND EXISTING CONDITIONS

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

**Building Name: Carteret High School** 

Address: 199 Washington Avenue, Carteret, NJ 07008

**Gross Floor Area:** 166,918 Square Feet **Number of Floors:** 3 and a basement

Year Built: 1926, with additions in 1961, 1973, and 1996



**Description of Spaces:** The property includes the school building, athletic fields, a stadium, and a utility storage building [this last building was inaccessible at the time of the site visit]. The original school building consists of 3 floors and takes up about 60% of the total school area. The newer 1961 "Annex" addition consists of 2 floors and occupies about 40% of the total building area. Spaces consist of classrooms, small group instruction rooms, offices, cafeteria, auditorium, stage, laboratories, gymnasiums, computer lab, media center, weight room, training room, wrestling room, storage rooms, toilet rooms and mechanical rooms.

**Description of Occupancy:** The school serves 990 students from 9<sup>th</sup> to 12<sup>th</sup> grade. There are approximately 100 school faculty and staff members.

**Number of Computers:** The school has approximately 240 desktop and laptop computers.

**Building Usage:** Hours of operation are 7:35 AM to 3:00 PM Monday through Friday, with various after-school activities. Custodial staff are on site in two shifts, from 6:00 AM to 3:00 PM, and 2:30 PM to 10:00 PM, 10 months per year.

#### **Building Envelope**

**Construction Materials:** Structural steel framing with concrete masonry unit exterior walls, insulation unknown but assumed to vary with age: greater insulation thicknesses assumed for more recent construction. Newer wings are constructed of steel framed panelized window walls. Interior walls are mostly sheetrock and painted concrete. Interior and exterior walls are in fair to good condition.

Façade: Primarily brick

**Roof:** The building consists of several wings all of which have flat roofs, and are covered with adhered membrane or stone ballast on top of rolled roofing. The attic space above the original high school footprint does not contain any visible insulation, and an ECM is included which considers it. In the newer Annex roof insulation consists of rigid foam underneath the adhered membrane, directly above the roof deck. The attic space in this section was not accessible at the time of the site visit. Roof color varies from is light gray to dark gray, and in general is in good condition. Additionally the roof supports an extensive PV solar array, estimated at 150 kW.

**Windows** Double hung double pane windows with aluminum frames. Windows are in good condition and no ECMs associated with window replacement were evaluated.

**Exterior Doors:** Exterior doors throughout the building are aluminum framed with full length safety glass, and solid metal doors for employee use only. There is a vestibule at each public entrance. Some of the sweeps and seals are in poor condition, and an ECM evaluating this is included.

#### <u>Heating Ventilation & Air Conditioning (HVAC) Systems</u>

**Heating:** Heating systems for the school are delineated into two general types: the original portion of the school (60%) is heated by steam. The newer 1961 Annex (40%) is heated by hot water. Both steam and hot water (indirectly) is generated by the same two Cleaver Brooks boilers, with capacities of 10 million BTU, installed in 2007. Only one boiler at a time is required to keep the building heated and for this reason they are operated on an alternating basis. Hot water for the Annex is created in a steam to hot water heat exchanger, also located in the Boiler Room. Two base mounted pumps (without VFDs), each 7.5 HP, circulate this water around the Annex, operating in a lead-lag manner. An ECM is included which considers the addition of VFDs to these pumps.

The typical classroom in the original section is equipped with one unit ventilator and one steam radiator. The unit ventilator is outfitted with a steam heating coil. Classrooms in the newer Annex are equipped with one hydronic unit ventilator and hydronic perimeter finned radiation. An AAON gas fired rooftop unit provides heating, ventilation, and air conditioning (DX) to the cafeteria. A gas fired Reznor RTU provides heating, ventilation, and air conditioning (DX) to the auditorium. Corridors and entrance-ways have steam or hydronic cabinet heaters. The kitchen is served by a 2001 gas fired ICP make-up air unit located outside on a concrete pad adjacent to the building. It was noted at the time of the site visit that the supply and return air ductwork for this unit, which penetrate the exterior wall, needs to be re-insulated (an ECM is included which addresses this). The main gymnasium is served by two air handling units outfitted with steam

heating coils. Additional units within the building include the occasional electric unit heater and electric finned radiation.

The two stadium locker rooms are heated by heating only Gibson residential style gas furnaces, which are approximately five years old with capacities of 100,000 BTU each. These are installed in mechanical spaces adjacent to the locker rooms, with heated & conditioned air ducted in.

**Cooling:** Approximately 30% of the building is air conditioned. With the exception of the AAON cafeteria unit and the Reznor auditorium unit, cooling is accomplished with small 1 ton window A/C units in offices, and larger capacity split DX Fujitsu units that serve the computer lab and media center. Altogether the school utilizes approximately 100 tons of cooling.

**Ventilation:** Ventilation air is provided to the interior of the building by classroom unit ventilators, cafeteria and auditorium rooftop units, the kitchen make-up air unit, and operable windows. In general, building ventilation is adequate and no associated ECMs are included.

**Exhaust:** The facility utilizes exhaust fans of various sizes located on the roof to exhaust air from restrooms and storage areas, and provide general pressure relief. The gymnasium has exhaust fans installed into a "doghouse" above the gymnasium on the roof.

**Solar PV:** The building supports a 150 kW (estimated) solar array located on the roof. This system is a grid intertie system in which excess electricity is sold back to the utility, and energy bills reflect the net electricity consumption by the high school.

#### **Controls Systems**

The building has a pneumatic temperature controls system. The heating system is activated in October and de-activated in May. During the heating season, the boiler(s) is manually turned on at about 6:00 AM each morning by maintenance staff in preparation for students' arrival at 8:00 AM. On cold nights the boiler is cycled every two hours using a timer, if the outdoor air temperature drops to 30°F or below. Each office and classroom is outfitted with a wall mounted thermostat tied to a control valve on the unit ventilator and/or perimeter radiation in the room. Hot water that serves the Annex is set to 180°F without modulation in response to the outdoor air temperature. No scheduling of the system occurs-- there is no night or unoccupied setback. Temperatures are generally set to 72°F in classrooms, but can be readily changed per individual preferences. Spaces that are air conditioned are maintained at about 74-75°F.

#### **Domestic Hot Water Systems**

Most of the domestic hot water for the school is provided by two (2) Aerco KC Series gas fired condensing water boilers with a capacity of 930,000 BTU at 93% nominal efficiency. Water is circulated at a maximum continuous rate of 30 gpm by (2) inline circ pumps. This system is approximately 7 years old. Domestic hot water is primarily used for hand-washing. The kitchen has its own dedicated electric 20 gallon Rheem domestic hot water heater.

The two external stadium locker rooms each have their own gas fired DHW heaters. Each of these consists of one A.O.Smith 100 gallon water heater with 75,000 BTU of capacity, installed in 1996. An ECM which considers replacing these with more efficient condensing DHW heaters is included.

#### **Kitchen Equipment**

The building has a full kitchen, cooking facilities, and a full cafeteria. The kitchen contains primarily natural gas and some electric cooking appliances. Cooking equipment consists of multiple Blodgett & Garland bread ovens; Groen steam convection ovens and steam kettles; and a gas fired range. The surface of the range is exhausted by (approximate size) a 6' x 6' hood connected to one (1) rooftop exhaust fan. The Blodgett and Garland bread ovens are exhausted by one 8' x 6' hood connected to one (1) rooftop exhaust fan. Dishes are washed by hand in a conventional stainless steel triple sink. One (1) large Bally walk-in refrigerator keeps food at 32°F; a walk-in freezer to the back provides frozen food storage at 3°F. Several Continental reach-in coolers are also utilized. An ECM for a walk-in cooler controller is included in this report.

#### **Plug Load**

The Carteret High School building has computers, copiers, residential appliances (microwave, refrigerator), printers, and portable heaters which contribute to the plug load in the building. By implementing other ECMs, plug load from the portable heaters may be reduced.

#### **Plumbing Systems**

About 50% of the building's plumbing fixtures have been upgraded to lower flow fixtures, with 1.0 GPF for urinals, 1.8 GPF for water closets, and 2.2 GPM for metering type spring-loaded lavatory faucets. Discussion with maintenance personnel indicated that currently the program is 'as fixtures fail, they are upgraded.' The remainder are 1960's vintage high flow fixtures with wall recessed urinals, 3.5 GPF water closets, and high flow lavatories. ECMs are included which address these.

#### **Lighting Systems**

Interior lighting is primarily T-8 32 watt four foot fluorescent lamps mounted in a variety of different fixtures. Recessed CFL lamps are used in vestibules and entranceways. All light fixtures are switched. Exterior building lighting consists of 100 watt metal halide wall-packs, 85 watt induction lamps, and 400 watt metal halide decorative sconces. The stadium playing field is illuminated with four large banks of lights installed onto 60 ft. steel poles. Two of the banks consist of ten 1,000 watt metal halide lamps; the two other banks consist of twelve 1,000 watt metal halide lamps.

Three lighting ECMs have been included which consist of adding occupancy sensors to the existing lighting, replacement of the T-8 lighting with LED lighting and a third ECM that evaluates the effect of occupancy sensors used with the LED lighting upgrades.

#### 3.0 UTILITIES

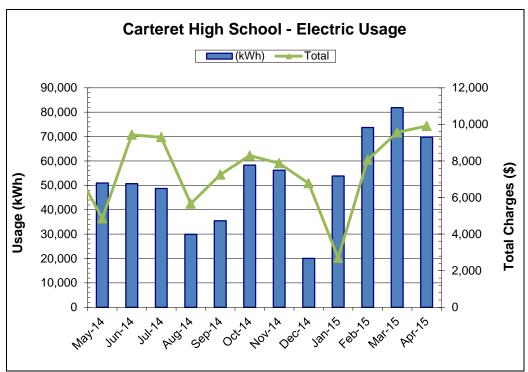
Utilities used by the building are delivered and supplied by the following utility companies:

	Electric	Natural Gas
Deliverer	PSE&G	Elizabethtown Gas
Supplier	Direct Energy	Woodruff Energy

For the 12-month period ending in May 2015, the utilities usages and costs for the building were as follows:

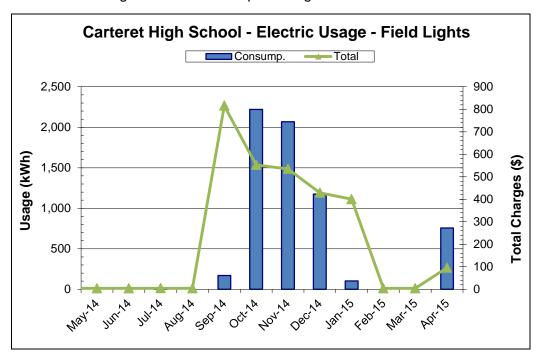
Electric					
Total Annual Consumption	647,566	kWh/yr.			
Total Annual Cost	94,304	\$			
Blended Unit Rate	0.146	\$/kWh			
Supply Rate	0.089	\$/kWh			
Demand Rate	3.01	\$/kW			
Peak Demand	476.0	kW			
Natu	ıral Gas				
Annual Usage	66,851	Therms/yr.			
Annual Cost	72,686	\$			
Rate	1.087	\$/therm			

Blended Rate: Average rate charged determined by the annual cost / annual usage Supply Rate: Actual rate charged for electricity usage in kWh (based on most recent electric bill) Demand Rate: Rate charged for actual electrical demand in kW (based on most recent electric bill)

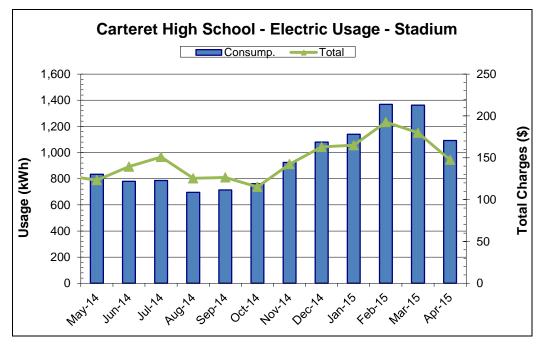


The electrical usage above reflects the net electricity consumed by the high school year-round, less the kWh generated by the PV solar panels. A higher amount of

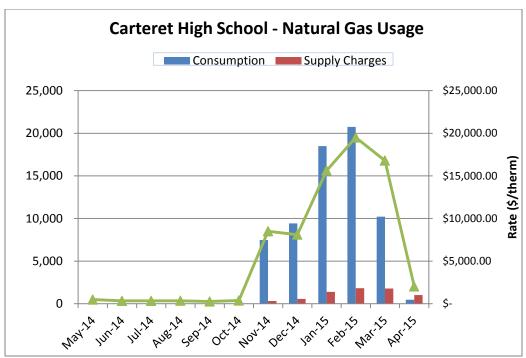
electricity is generated by the PV panels in the summertime during a time of year in which the building has reduced occupant usage.



The electrical usage for field light usage varies with sporting activities that utilize the stadium fields at night.



The stadium is adjacent to the track field and includes seating for spectators as well as two locker rooms which are not air conditioned, and see year-round usage.



The natural gas usage is mostly driven by space heating in the winter months with a distinct tail-off of usage during the summer months.

See Appendix A for utility analysis.

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

Com	Recommended to			
Utility	Units	Shop for Third		
	Rate		Party Supplier?	
Electricity	\$/kWh	\$0.15	\$0.13	Υ
Natural Gas	\$/Therm	\$1.09	\$0.96	Y

<sup>\*</sup> Per U.S. Energy Information Administration (2013 data - Electricity and Natural Gas)

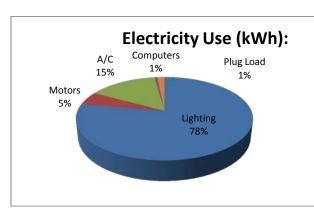
Additional information on selecting a third party energy supplier is available here:

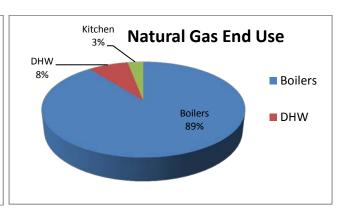
#### http://www.state.nj.us/bpu/commercial/shopping.html.

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

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

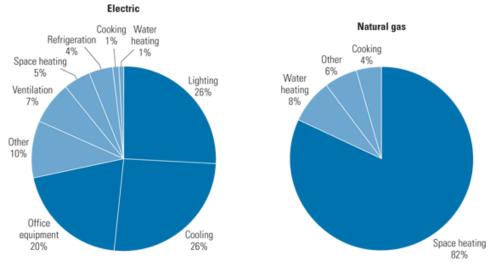
#### Site End-Use Utility Profile





Most of the electricity consumed by the high school is used for lighting, cooling, motors, and plug loads such as computers and copiers; most of the natural gas is used for space heating. Each building's energy profile is different, and the following charts represent typical utility profiles for commercial buildings per U.S. Department of Energy.

#### **Typical End-Use Utility Profile for Commercial Buildings**



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

#### 4.0 BENCHMARKING

The EPA Portfolio Manager benchmarking tool provides a site and source Energy Use Intensity (EUI), as well as an Energy Star performance rating for qualifying building types. The EUIs are provided in kBtu/ft²/year, and the performance rating represents how energy efficient a building is on a scale of 1 to 100, with 100 being the most efficient. In order for a building to receive and Energy Star label, the energy benchmark rating must be at least 75. As energy use decreases from implementation of the proposed measures, the Energy Star rating will increase.

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

Building	Site EUI kBtu/ft²/yr	Source EUI Btu/ft²/yr	Energy Star Rating (1-100)	
Carteret High School	50.4	69.6	94	

The building has a higher than average Energy Star Rating Score (50 being the median score). It is likely that one of the largest contributing factors to the high Energy Star Rating is the existence of the 150 kW (estimated) solar array on the roof. By implementing the measures discussed in this report, it is expected that the EUI can be further reduced and the Energy Star Rating increased.

#### 5.0 ENERGY CONSERVATION MEASURES

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

- Energy conservation measures (ECMs) are energy savings recommendations that typically require a financial investment. For these areas of opportunity, CHA prepared detailed calculations, as summarized in this section and in Appendix C. In general, additional savings may exist from reductions in maintenance activities associated with new equipment or better controls; however for conservatism, maintenance savings are not accounted for in this report; instead the only savings which are reported are those derived directly from reductions in energy which can be tracked by the utility bills.
- Operational and Maintenance measures (O&M) consist of low- or no-cost operational opportunities, which if implemented would have positive impacts on overall building operation, comfort levels, and/or energy usage. There are no estimated savings, costs or paybacks associated with the O&M measures included as part of this study.

Energy savings were quantified in the form of:

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

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

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

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

#### 5.1 ECM-1 Add Attic Insulation to R-38

Portions of the attic were investigated during the site visit, and no insulation was observed installed either above the original ceiling or into the rafter spaces underneath the roof deck. It is estimated that the insulating value of the existing roof assembly has a thermal resistance value of R-9. Providing insulation into the attic will further reduce heat loss from the building.

To calculate the savings, the heat losses through the roof assembly of the facility were found using the existing roof's R-value of 9 and bin weather data. The values were totaled to determine the existing annual energy losses. Heating and cooling energy loss values were then determined with a thermal resistance which included the additional R-29 fiberglass batting insulation. The total proposed roof R-value with insulation is approximately R-38.

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

**ECM-1 Install Attic Insulation to R-38** 

Budgetary Cost	Annual Utility Savings			ROI	Potential Incentive*	Payback (without	Payback (with	
	E	lectricity	Natural Gas	Total		incentive	incentive)	incentive)
\$	kW	kWh	Therms	\$	%	\$	Years	Years
117,464	0	22,403	2,168	5,628	0.2	0	20.9	20.9

<sup>\*</sup> Does not qualify for Incentive from the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is recommended.

#### 5.2 ECM-2 Replace Door Sweeps and Seals

It was noted during the site visit that the seals and sweeps were showing wear on nearly all of the exterior doors, and daylight was visible between the door and frame.

The seals around exterior doors fail over time. This leads to infiltration of unconditioned outside air or exfiltration of indoor air resulting in increased heating energy usage. This measure calls for the replacement of all exterior door seals. Replacement of these seals will result in a reduction of the buildings heating and cooling loads, therefore providing natural gas and electricity savings. The linear footage of gap and wind speed is used to estimate the infiltration rate, which is then multiplied by the BIN weather data and the equipment efficiencies to determine the annual energy savings.

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

**ECM-2** Replace Door Sweeps and Seals

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive	Payback (without	Payback (with
Cost	El	ectricity	Natural Gas	Total		incentive	incentive)	incentive)
\$	kW	kWh	Therms	\$		\$	Years	Years
1,244	0	18	22	26	(0.7)	0	47.0	47.0

This measure is recommended despite the long payback period.

#### 5.3 ECM-3 Steam to Hot Water Conversion

The heating system consists of two (2) steam boilers providing steam via a two-pipe system to various radiators, unit ventilators, and unit heaters around the building. The heating system also contains a steam-to-hot water heat exchanger for approximately 40% of the building which has hydronic heat.

Steam heating systems are inherently inefficient and require high maintenance as compared to re-circulated hot water heating systems or other modern heating systems. As steam systems age, the steam traps fail which then requires more untreated cold make-up water. This in turn requires more chemical treatment and increases the risk of boiler thermal shock. Steam piping becomes fouled with scale and corrosion over time resulting in poor heat transfer and ultimately pipe failure. Steam heating systems use boilers that only operate up to 84% combustion efficiency and have even lower thermal efficiency. Multiple condensate pumps and boiler feed water pumps consume electricity that would not be needed in other modern heating systems.

In lieu of replacing the boilers in kind, this ECM evaluates replacing the steam system in its entirety with a more efficient hot water system. New modulating condensing gas boilers are available that minimally operate at 88%, and can operate as high as 96%. To implement this ECM, the old steam boilers, distribution piping, venting and terminal units would be removed and the new hot water boilers, distribution piping and primary pumps put in their place. Significant piping and wiring modifications would be needed. New dedicated boiler venting would also need to be installed either through the roof or sidewall. Asbestos abatement may need to be performed prior to any work and the cost for this is not included in the payback analysis.

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

**ECM-3** Steam to Hot Water Conversion

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without	Payback (with	
Cost	El	ectricity	Natural Gas	Total		incentive	incentive)	incentive)	
\$	kW	kWh	Therms	\$		\$	Years	Years	
4,302,457	0	0	14,874	16,168	(0.9)	2,000	>100	>100	

<sup>\*</sup> Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

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

#### 5.4 ECM-4 Eliminate Hot Water Generator and Install Condensing Boiler

The heating system for the 'Annex' consists of two (2) boilers providing steam to a steam-to-hot water heat exchanger, providing hot water to the 40% of the building which has hydronic heat. This method of generating hot water has two levels of inefficiency: the original steam boilers (80%) combined with the heat exchanger (95% +/-). The resulting efficiency for the hot water portion of the school is at best 76%.

It is recommended that the heat exchanger be replaced with a high efficiency natural gas fired condensing hot water boiler. New modulating condensing gas boilers are available that operate at a minimal efficiency of 88%, and can operate as high as 96%, depending upon the outdoor air temperature.

To implement this ECM, the old heat exchanger would be removed and the new hot water boiler installed in its place. Some localized piping and wiring would be needed. New dedicated boiler venting would also need to be installed either through the roof or sidewall.

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

ECM-4 Eliminate Hot Water Generator and Install Condensing Boiler

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without incentive)	Payback (with
Cost	Electrici	ectricity	Natural Gas	Total		incentive		incentive)
\$	kW	kWh	Therms	\$		\$	Years	Years
317,043	0	0	9,228	10,031	(0.7)	1,500	31.6	31.5

<sup>\*</sup> Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended despite the long payback period.

#### 5.5 ECM-5 Install VFDs on Hot Water Pumps

The existing 7.5 HP base mounted B&G hot water pumps serving the 'Annex' portion of the building are not controlled by variable frequency drives (VFDs). Ideally pumps are perfectly selected to match the needs of a system operating a maximum capacity. Most times 1) pumps are over-sized somewhat for safety, and 2) the system is operating at less than full heating capacity. VFDs allow pumps to run at slower RPMs to better meet the needs of the system and in the process, energy is saved.

To implement this ECM, the existing motors would be removed and new motors and VFDs installed in their place. Piping and wiring modifications would be needed.

The order of magnitude implementation costs and savings related to these ECMs are detailed in Appendix H and summarized below:

**ECM-5** Install VFDs on Hot Water Pumps

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without	Payback (with	
Cost	Ele	ctricity	Natural Gas	Total		incentive	incentive)	incentive)	
\$	kW	kWh	Therms	\$	%	\$	Years	Years	
11,618	3.6	1,198	0	237	(0.6)	0	49.0	49.0	

<sup>\*</sup> Does not qualify for Incentive from the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is recommended.

#### 5.6 ECM-6 Replace Stadium Gas DHW Heaters w/ Condensing DHW Heaters

Domestic hot water for each of the locker rooms is generated by a gas-fired 100 gallon Rheemglas Fury hot water heater with a rated thermal efficiency of 81%. The domestic hot water heater serves showers, toilet rooms and sinks located in the locker room. Energy savings could be realized by replacing the existing unit with a high efficiency condensing gas fired heater, which can operate at efficiencies up to 94% and will not suffer from standby energy loss from the storage tank.

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

ECM-6 Replace Stadium Gas DHW Heaters w/ Condensing DHW Heaters

Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without	Payback (with	
Cost		lectricity	Natural Gas	Total		incentive	incentive)	incentive)	
\$	kW	kWh	Therms	\$		\$	Years	Years	
17,696	0	0	2,097	2,279	0.9	600	7.8	7.5	

This measure is recommended.

#### 5.7 ECM-7 Install Walk-In freezer Controls

One (1) large walk-in refrigerator keeps food at 32°F; a walk-in freezer to the back provides frozen food storage at 3°F. Installing a walk-in cooler/ freezer control system was assessed. The system will monitor both dry and wet bulb temperature within the walk-in unit and allow evaporators and compressors to modulate up and down based on enthalpy set points rather than by dry bulb temperature alone. Savings is a result of reduced run time of evaporator fans, compressors and door heaters.

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

**ECM-7 Install Walk-In Freezer Controllers** 

Budgetary Cost		Annual Utility Savings					Potential Incentive*	Payback (without	Payback (with
Cost	ost Electricity	Natural Gas	Water	Total		incentive	incentive)	incentive)	
\$	kW	kWh	Therms	kGal	\$	%	\$	Years	Years
22,275	0	9,142	0	0	1,335	(0.4)	200	16.7	16.5

<sup>\*</sup> Does not qualify for Incentive from the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities

This measure is recommended.

#### 5.8.1 ECM-L1 Lighting Replacement / Upgrades

The lighting within the Carteret High School offices consists of 2x4 and 2x2 recessed and ceiling mounted troffers having 32W T8 fluorescent lamps with prismatic lenses. Several areas also contain recessed cans outfitted with compact fluorescent lamps. A few compact fluorescents and incandescent bulbs are found in storage areas and mechanical spaces. A combination of occupancy sensors and wall switches control the interior lighting.

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

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

**ECM-L1 Lighting Replacement / Upgrades** 

Budgetary	Annual Utility Savings			ROI	Potential	Payback (without	Payback (with		
Cost			Natural Gas	Total	1.01	Incentive*	incentive)	incentive)	
\$	kW	kWh	Therms	\$		\$	Years	Years	
447,609	56.2	196,979	0	19,562	(0.3)	27,460	22.9	21.5	

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

This measure is not recommended in lieu of ECM L3.

#### 5.8.2 ECM-L2 Install Lighting Controls (Occupancy Sensors)

Presently, interior lighting fixtures are controlled by a combination of wall mounted switches and occupancy sensors. Review of the comprehensive lighting survey determined that lighting in some areas could benefit from installation of occupancy sensors to turn off lights when they are unoccupied.

This measure recommends installing occupancy sensors for the current lighting system. Using a process similar to that utilized in Section 5.7.1, 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 implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

**ECM-L2 Install Lighting Controls (Occupancy Sensors)** 

1	3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4								
Budgetary Cost		Annua	l Utility Savings		ROI	Potential Incentive*	Payback (without incentive)	Payback (with incentive)	
Cost	El	ectricity	Natural Gas	Total		incentive			
\$	kW	kWh	Therms	\$		\$	Years	Years	
51,300	0.0	64,134	0	5,708	0.8	3,800	9.0	8.3	

<sup>\*</sup> Incentive shown is per the New Jersey SmartStart Program. See section 6.0 for other incentive opportunities.

This measure is not recommended in lieu of ECM L3.

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

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

ECM-L3 Lighting Replacements with Controls (Occupancy Sensors)

Budgetary		Annual	Utility Savings		ROI	Potential	Payback (without	Payback (with	
Cost	Ele	ctricity	Natural			Incentive*	incentive)	incentive)	
\$	kW	kWh	Therms	\$		\$	Years	Years	
498,909	56.2	233,116	0	22,778	(0.3)	31,260	21.9	20.5	

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

This measure is recommended.

#### 5.9 Additional O&M Opportunities

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

- Re-insulate the Kitchen unit exterior ductwork
- Perform a steam trap survey
- Set computers monitors to turn off and computers to sleep mode when not in use
- Purchase ENERGY STAR® label Appliances
- Disconnect unnecessary or unused small appliances and electronics when not in use to reduce phantom loads
- Train staff to turn off lights when rooms are unoccupied
- Develop an Energy Master Plan to measure and track energy performance

#### 6.0 PROJECT INCENTIVES

#### 6.1 Incentives Overview

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

#### 6.1.1 New Jersey Smart Start Program

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

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

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

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

#### 6.1.2 Direct Install Program

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

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

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

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

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

Refer to Appendix D for more information on this program.

#### 6.1.3 New Jersey Pay For Performance Program (P4P)

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

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

Incentive Amount: \$0.10/SFMinimum incentive: \$5,000

Maximum Incentive: \$50,000 or 50% of Facility annual energy cost

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

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

#### <u>Electric</u>

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

#### <u>Gas</u>

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

Incentive cap: 25% of total project cost

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

#### Electric

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

#### <u>Gas</u>

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

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

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

#### 6.1.4 Energy Savings Improvement Plan

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

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

bonds or leases. Savings generated from the installation of energy conservation measures pay the principal of and interest on the bonds; for that reason, the debt service created by the ESOs is not paid from the debt service fund, but is paid from the general fund.

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

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

#### 6.1.5 Renewable Energy Incentive Program

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

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

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

#### 7.0 ALTERNATIVE ENERGY SCREENING EVALUATION

#### 7.1 Solar

#### 7.1.1 Photovoltaic Rooftop Solar Power Generation

The building was evaluated for the potential to install additional rooftop photovoltaic (PV) solar panels for power generation. However due to the extensive existing rooftop photovoltaic system and the minimal remaining available space, a solar PV system was determined to be inadvisable at this time.

#### 7.1.2 Solar Thermal Hot Water Generation

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

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

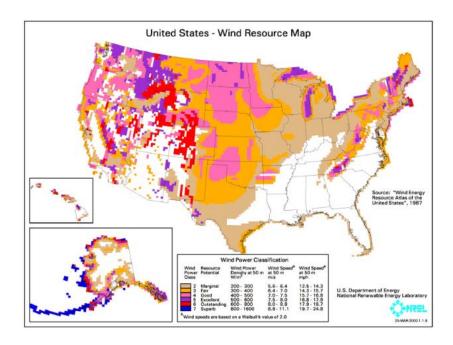
Several options exist for using active solar thermal systems for space heating. The most common method is called a passive solar hot water system involves using glazed collectors to heat a liquid held in a storage tank (similar to an active solar hot water system described above which requires pumping).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

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

#### 7.2 Wind Powered Turbines

Wind power is the conversion of kinetic energy from wind into mechanical power that is used to drive a generator which creates electricity by means of a wind turbine. A wind turbine consists of rotor and blades connected to a gearbox and generator that are mounted onto a tower. Newer wind turbines also use advanced technology to generate electricity at a variety of frequencies depending on the wind speed, convert it to DC and then back to AC before sending it to the grid. Wind turbines range from 50 – 750 kW for utility scale turbines down to below 50 kW for residential use. On a scale of 1 (the lowest) to 7 (the highest), Class 3 and above (wind speeds of 13 mph or greater) are

generally considered "good wind resource" according to the Wind Energy Development Programmatic EIS Information Center hosted by the Bureau of Land Management. According to the map below, published by NREL, Carteret, NJ is classified as Class 1 at 50m, meaning the city would not be a good candidate for wind power.



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

#### 7.3 Combined Heat and Power Plant

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

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

This measure is not recommended due to the absence of year-round thermal loads which are needed for efficiency CHP operation.

#### 7.4 Demand Response Curtailment

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

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

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

**Building Electric Load Profile** 

			Onsite	
Peak Demand kW	Min Demand kW	Avg Demand kW	Generation Y/N	Eligible? Y/N
476	145	264.9	N	Υ

This measure is not recommended for further review because the building usage does not lend itself to load sharing.

#### 8.0 CONCLUSIONS & RECOMMENDATIONS

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

The following projects should be considered for implementation:

- Install Attic Insulation
- Door Sweeps & Seals
- Eliminate Hot Water Generator and Install Condensing HW Boiler
- Install VFDs on Pumps
- Replace Stadium Gas DHW Heaters w/ Condensing DHW Heaters
- Walk-In Cooler Controls
- Lighting Replacements with Controls (Occupancy Sensors)

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

Electric Savings (kWh)	Natural Gas Savings (therms)	Total Savings (\$)	Payback (years)
265,876	13,515	42,314	23.3

If the recommended ECMs are implemented, energy savings would be as follows:

	Existing Conditions	Post Recommended ECMs	Percent Savings
Costs (\$)	166,990	124,676	25%
Electricity (kWh)	647,566	381,690	41%
Natural Gas (therms)	66,851	53,336	20%
Site EUI (kbtu/SF/Yr)	53.3	39.8	

Next Steps: This energy audit has identified several areas of potential energy savings. The Carteret Board of Education can use this information to pursue incentives offered by the NJBPU's NJ Clean Energy Program.



Carteret School District
Carteret High School
199 Washington Ave. Carteret, NJ 07008

#### **Utility Bills: Account Numbers**

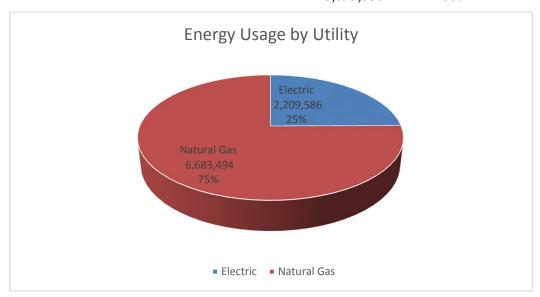
Account Number	<u>Building</u>	Meter Location	<u>Type</u>	<u>Notes</u>
42 002 698 05	Carteret High School	199 Washinton ave, Carteret, NJ 07008	Electric	Solar
69 910 598 03	Carteret High School	Herman Ave. Carteret, NJ 07008	Electric	Field lights
69 911 010 01	Carteret High School	199 Washington Ave. Carteret, NJ 0700	08 Electric	
5439331320	Carteret High School	199 Washington Ave. Carteret, NJ 0700	0{ Gas	

## Carteret School District Carteret High School 199 Washington Ave. Carteret, NJ 07008

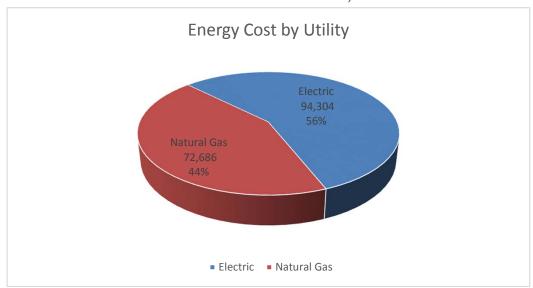
### **Annual Utilities** 12-month Summary

Electric		
Annual Usage	647,566	kWh/yr
Annual Cost	94,304	\$
Blended Rate	0.146	\$/kWh
Consumption Rate	0.089	\$/kWh
Demand Rate	3.01	\$/kW
Peak Demand	476.0	kW
Min. Demand	145.4	kW
Avg. Demand	264.9	kW
Natural Gas		
Annual Usage	66,851	Therms/yr
Annual Cost	72,686	\$
Rate	1.087	\$/therm
Energy Summary		
Building Area	157,745	SF
Energy Usage Intensity (EUI)	56	KBtu/SF/yr
Energy Cost Index (ECI)	1.06	\$/SF/yr
Total Annual Utility Costs	166,990	\$

Utility	KBtu	0/0
Electric	2,209,586	25%
Natural Gas	6,683,494	75%
	8,893,080	100%



Utility	\$	%
Electric	94,304	56%
Natural Gas	72,686	44%
	166,990	100%



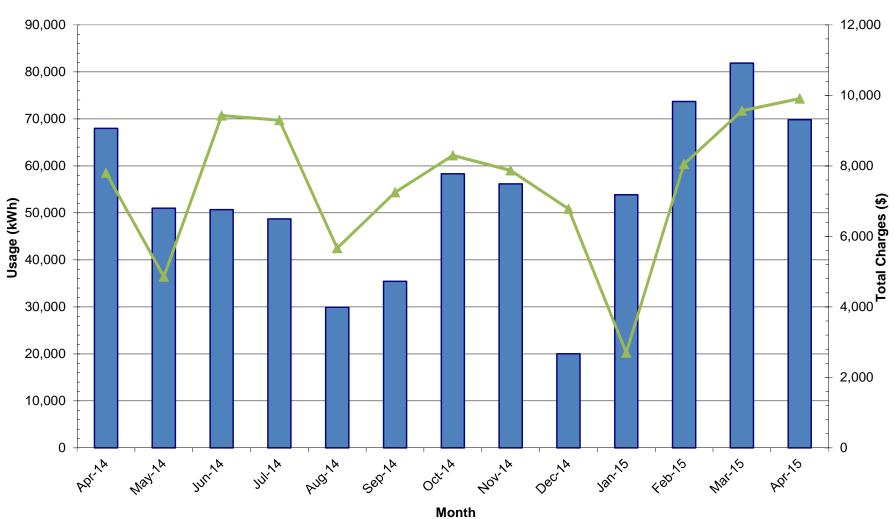
Electric Service

For Service at: 199 Washinton ave, Carteret, NJ 07008 Account No.: 42 002 698 05 Delivery: PSE&G Supply: Direct Energy Meter No.: 9211795 / 9197557

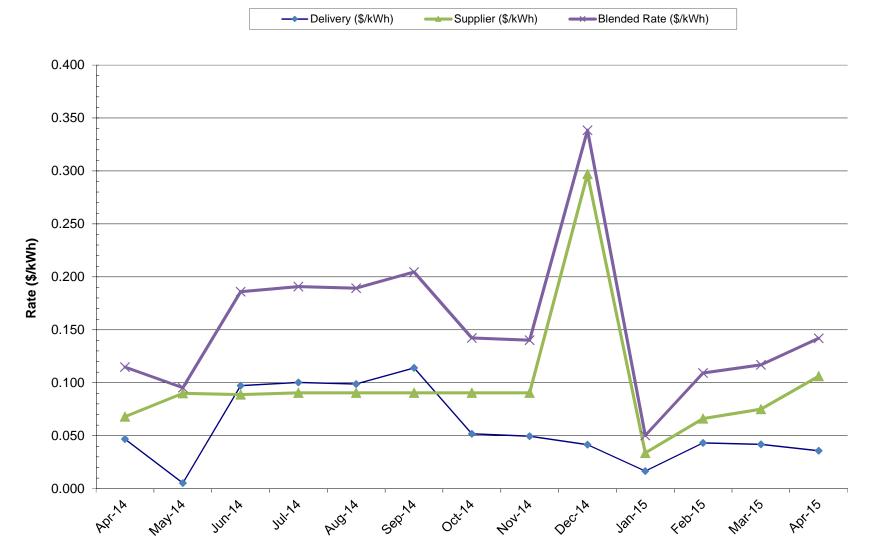
					Р	rovider Charges	6	Usage (kWh) vs. De	emand (kW) Charges		Unit Costs			
	Total kWh In	Total kWh Out	Net Consump.	Demand	Delivery	Supplier	Total	Consumption	Demand	Delivery	Supplier	Consumption Rate	Demand	Blended Rate
Month	(kWh)	(kWh)	(kWh)	(kW)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$/kWh)	(\$/kWh)	(\$/kWh)	(\$/kW)	(\$/kWh)
April-14	68,332	355	67,977	240.1	3,184.81	4,615.75	7,800.56	6949.55	851.01	0.047	0.068	0.102	3.544	0.115
May-14	53,700	2,714	50,986	238.7	269.11	4,589.70	4,858.81	4012.76	846.05	0.005	0.090	0.079	3.544	0.095
June-14	53,125	2,430	50,695	259.9	4,929.75	4,499.78	9,429.53	8509.31	920.22	0.097	0.089	0.168	3.541	0.186
July-14	51,540	2,829	48,711	266.8	4,886.22	4,409.86	9,296.08	8351.91	944	0.100	0.091	0.171	3.539	0.191
August-14	31,470	1,545	29,925	145.4	2,953.76	2,709.00	5,662.76	5139.41	523.35	0.099	0.091	0.172	3.599	0.189
September-14	36,836	1,387	35,449	222.5	4,041.60	3,209.15	7,250.75	6449.89	800.86	0.114	0.091	0.182	3.599	0.205
October-14	59,203	885	58,318	295.9	3,018.81	5,279.55	8,298.36	7233.30	1065.06	0.052	0.091	0.124	3.599	0.142
November-14	57,176	988	56,188	253.1	2,785.58	5,086.68	7,872.26	6961.25	911.01	0.050	0.091	0.124	3.599	0.140
December-14	20,033	0	20,033	248.8	831.48	5,948.88	6,780.36	6571.40	208.96	0.042	0.297	0.328	0.840	0.338
January-15	53,850	9	53,841	247.0	889.06	1,813.56	2,702.62	1813.56	889.06	0.017	0.034	0.034	3.599	0.050
February-15	73,719	2	73,717	231.0	3,179.69	4,874.20	8,053.89	7222.07	831.82	0.043	0.066	0.098	3.601	0.109
March-15	81,909	47	81,862	476.0	3,423.06	6,142.56	9,565.62	8708.74	856.88	0.042	0.075	0.106	1.800	0.117
April-15	69,826	19	69,807	318.0	2,497.27	7,410.91	9,908.18	9048.93	859.25	0.036	0.106	0.130	2.702	0.142
Total (All)	710,719	13,210	697,509	476.00	\$36,890.20	\$60,589.58	\$97,479.78	\$86,972.07	\$10,507.70	\$0.05	\$0.09	0.125	\$3.05	\$0.14
Total (last 12-months)	642,387	12,855	629,532	476.00	\$33,705.39	\$55,973.83	\$89,679.22	\$80,022.52	\$9,656.69	\$0.05	\$0.09	0.127	\$3.01	\$0.14
Notes			1	2	3	4	5			6	7			8
1.)	Number of kWh	of electric energy	697,509											
		of power measured												
3.)	Electric charges	from Delivery pro	vider											
			ider - note, include	s 8.875% tax										
5.)	Total charges (I	Delivery + Supplier	.)											
6.)	Delivery Charge	es (\$) / Consumption	on (kWh)											
7.)	Supplier Charge	es (\$) / Consumption	on (kWh)											
8.)	Total Charges (	\$) / Consumption (	(kWh)											
9.)	After December	-14 meter 921179	5 replaced meter 9	197557										
10.)	Values highlight	ed in red are estin	nates based on ave	erages										

### **Carteret High School - Electric Usage**





# **Carteret High School - Electric Rates**



Month

**Carteret School District** Carteret High School

199 Washington Ave. Carteret, NJ 07008

Electric Service

For Service at: 199 Washington Ave. Carteret, NJ 07008

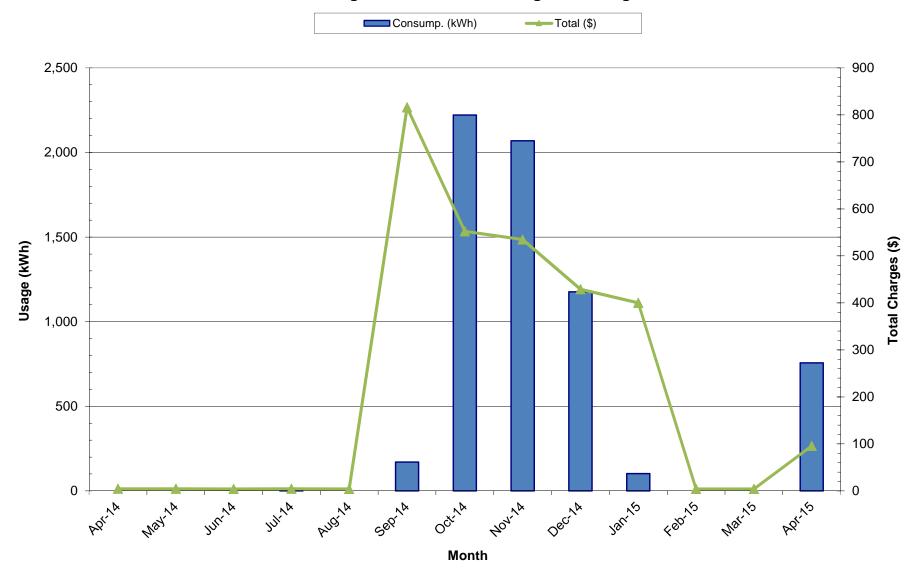
Account No.: 69 910 598 03 Delivery: PSE&G Meter No.: 726025218 Supply: Direct Energy

			P	rovider Charges	6	Usage (kWh) vs. D	emand (kW) Charges	S Unit Costs				
	Consump.	Demand	Delivery	Supplier	Total	Consumption	Demand	Delivery	Supplier	Consumption Rate	Demand	Blended Rate
Month	(kWh)	(kW)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$/kWh)	(\$/kWh)	(\$/kWh)	(\$/kW)	(\$/kWh)
April-14	0	0.0	4.27	0.00	4.27	4.27	0.00	N/A	N/A	N/A	N/A	N/A
May-14	0	0.0	4.27	0.00	4.27	4.27	0.00	N/A	N/A	N/A	N/A	N/A
June-14	0	0.0	4.26	0.00	4.26	4.26	0.00	N/A	N/A	N/A	N/A	N/A
July-14	1	0.0	4.28	0.09	4.37	4.35	0.02	4.280	0.090	4.350	N/A	4.370
August-14	0	0.0	4.24	0.00	4.24	4.24	0.00	N/A	N/A	N/A	N/A	N/A
September-14	170	63.8	800.59	15.39	815.98	25.98	790.00	4.709	0.091	0.153	12.382	4.800
October-14	2,221	64.3	351.24	201.07	552.31	273.52	278.79	0.158	0.091	0.123	4.336	0.249
November-14	2,069	64.7	347.49	187.31	534.80	254.28	280.52	0.168	0.091	0.123	4.336	0.258
December-14	1,176	65.2	322.59	106.46	429.05	146.36	282.69	0.274	0.091	0.124	4.336	0.365
January-15	102	65.4	390.89	9.23	400.12	116.56	283.56	3.832	0.090	1.143	4.336	3.923
February-15	0	0.0	4.24	0.00	4.24	4.24	0.00	N/A	N/A	N/A	N/A	N/A
March-15	0	0.0	4.24	0.00	4.24	4.24	0.00	N/A	N/A	N/A	N/A	N/A
April-15	757	0.0	27.24	68.53	95.77	95.77	0.00	0.036	0.091	0.127	N/A	0.127
Total (All)	6,496	65.40	\$2,269.84	\$588.08	\$2,857.92	\$942.34	\$1,915.58	\$0.35	\$0.09	0.145	\$0.01	\$0.44
Total (last 12-months)	6,496	65.40	\$2,265.57	\$588.08	\$2,853.65	\$938.07	\$1,915.58	\$0.35	\$0.09	0.144	\$0.01	\$0.44
Notes	1	2	3	4	5			6	7			8

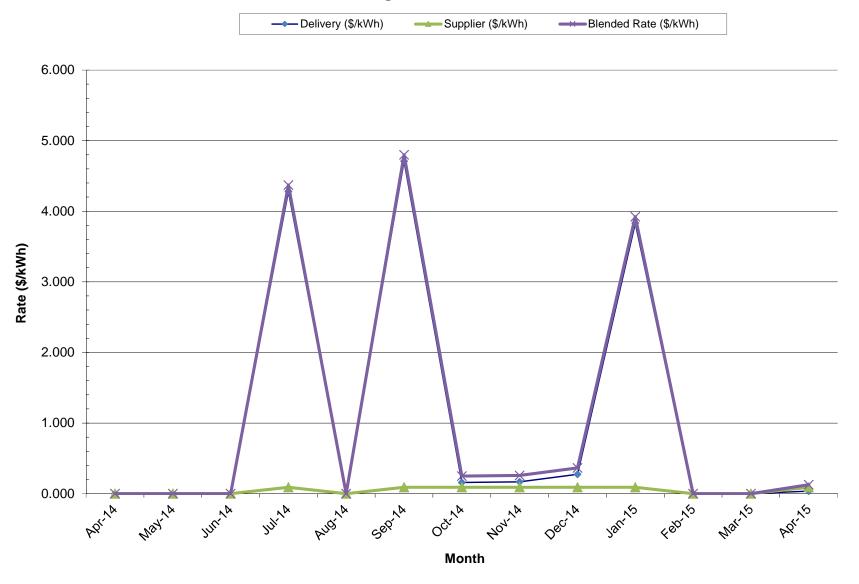
- Number of kWh of electric energy used per month

- 1.) Number of kWh of electric energy used per month
  2.) Number of kWh of power measured
  3.) Electric charges from Delivery provider
  4.) Electric charges from Supply provider note, includes 8.875% tax
  5.) Total charges (Delivery + Supplier)
  6.) Delivery Charges (\$) / Consumption (kWh)
  7.) Supplier Charges (\$) / Consumption (kWh)
  8.) Total Charges (\$) / Consumption (kWh)

### **Carteret High School - Electric Usage - Field Lights**



# **Carteret High School - Electric Rates**



Electric Service

For Service at: 199 Washington Ave. Carteret, NJ 07008

Account No.: 69 911 010 01 Delivery: PSE&G Meter No.: 626025373 Supply: Direct Energy

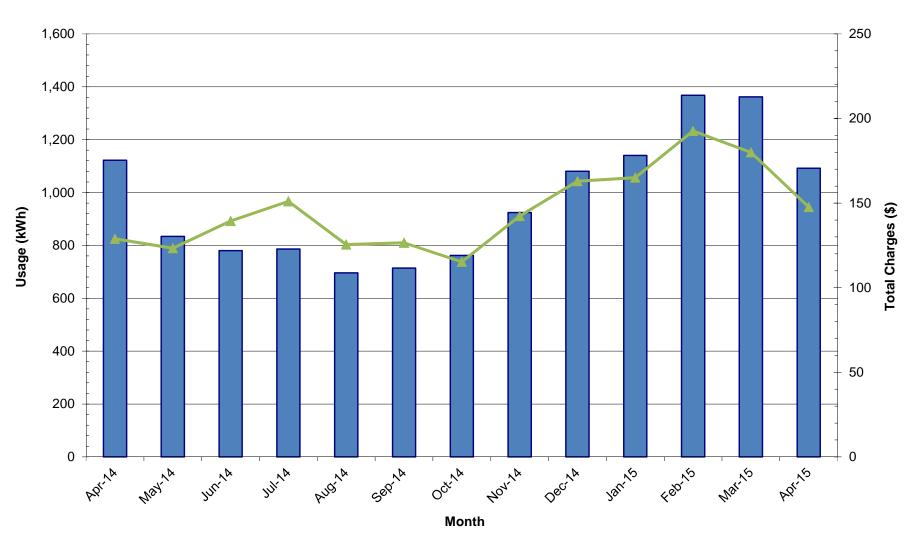
			P	rovider Charges	3	Usage (kWh) vs. De	emand (kW) Charges	Unit Costs				
	Consump.	Demand	Delivery	Supplier	Total	Consumption	Demand	Delivery	Supplier	Consumption Rate	Demand	Blended Rate
Month	(kWh)	(kW)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$/kWh)	(\$/kWh)	(\$/kWh)	(\$/kW)	(\$/kWh)
April-14	1,122	3.0	53.42	75.50	128.92	116.08	12.84	0.048	0.067	0.103	4.280	0.115
May-14	834	5.0	52.66	70.61	123.27	101.87	21.40	0.063	0.085	0.122	4.280	0.148
June-14	780	2.8	68.52	70.89	139.41	105.21	34.20	0.088	0.091	0.135	12.214	0.179
July-14	786	3.8	79.86	71.16	151.02	104.64	46	0.102	0.091	0.133	12.205	0.192
August-14	696	2.6	62.44	63.01	125.45	93.26	32.19	0.090	0.091	0.134	12.381	0.180
September-14	714	2.5	61.87	64.64	126.51	95.56	30.95	0.087	0.091	0.134	12.380	0.177
October-14	762	4.3	46.28	68.98	115.26	96.62	18.64	0.061	0.091	0.127	4.335	0.151
November-14	924	6.1	58.71	83.65	142.36	115.91	26.45	0.064	0.091	0.125	4.336	0.154
December-14	1,080	6.5	65.16	97.77	162.93	134.75	28.18	0.060	0.091	0.125	4.335	0.151
January-15	1,140	5.3	61.80	103.20	165.00	153.16	11.84	0.054	0.091	0.134	2.234	0.145
February-15	1,368	5.3	68.78	123.85	192.63	169.65	22.98	0.050	0.091	0.124	4.336	0.141
March-15	1,362	10.6	68.60	111.36	179.96	156.98	22.98	0.050	0.082	0.115	2.168	0.132
April-15	1,092	2.6	48.71	98.86	147.57	136.28	11.29	0.045	0.091	0.125	4.342	0.135
Total (All)	12,660	10.60	\$796.81	\$1,103.47	\$1,900.28	\$1,579.96	\$320.32	\$0.06	\$0.09	0.125	\$0.00	\$0.15
Total (last 12-months)	11,538	10.60	\$743.39	\$1,027.97	\$1,771.36	\$1,463.88	\$307.48	\$0.06	\$0.09	0.127	\$0.00	\$0.15
Notes	1	2	3	4	5			6	7			8

- Number of kWh of electric energy used per month

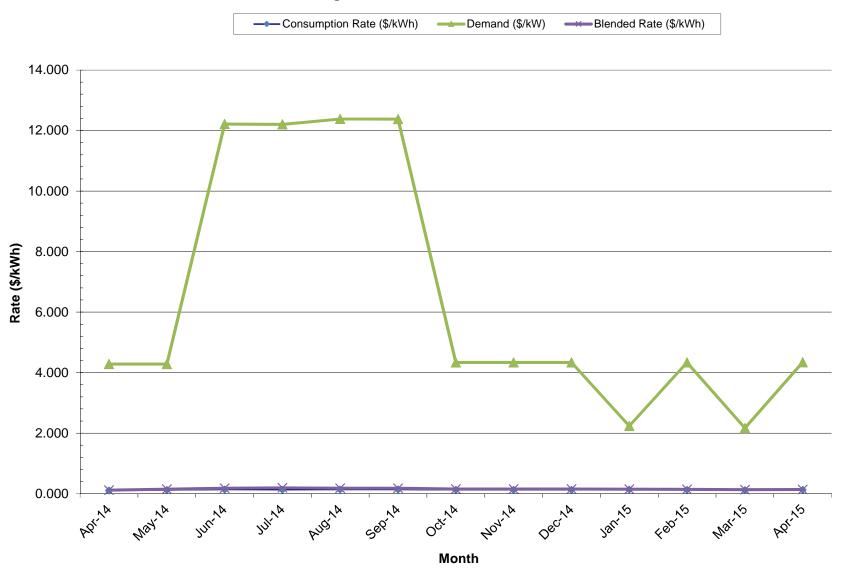
- 1.) Number of kWh of electric energy used per month
  2.) Number of kWh of power measured
  3.) Electric charges from Delivery provider
  4.) Electric charges from Supply provider note, includes 8.875% tax
  5.) Total charges (Delivery + Supplier)
  6.) Delivery Charges (\$) / Consumption (kWh)
  7.) Supplier Charges (\$) / Consumption (kWh)
  8.) Total Charges (\$) / Consumption (kWh)
  9.) Values highlighted in red are estimates based on averages

### Carteret High School - Electric Usage - Stadium





# **Carteret High School - Electric Rates**



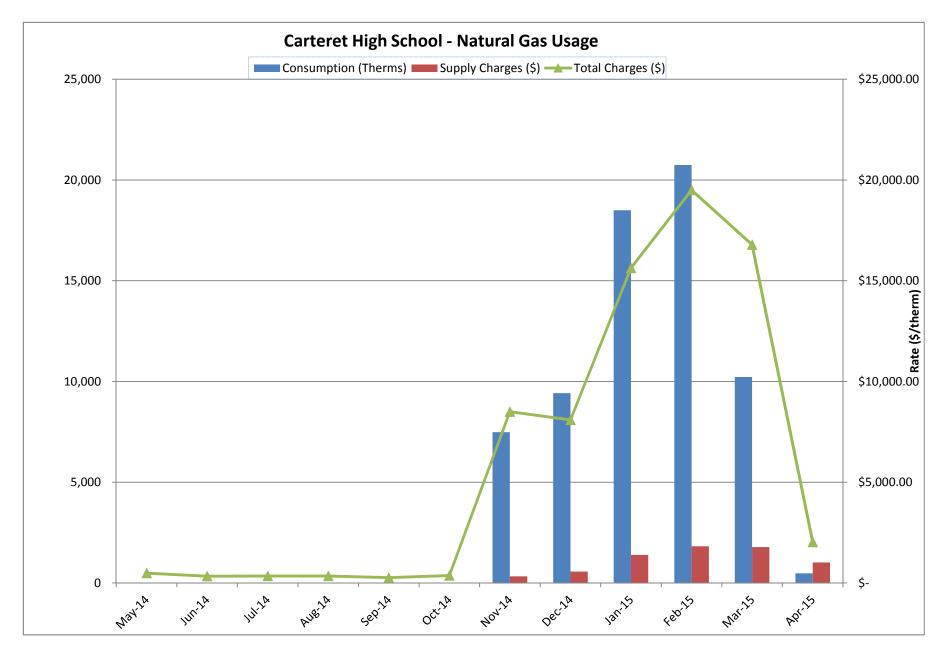
#### **Natural Gas Service**

For Service at: 199 Washington Ave. Carteret, NJ 07008

Account No.: 5439331320 Meter No: 09531963

Delivery: Elizabethtown Gas Supply: Woodruff Energy

Month	Consumption (Therms)	Delivery Charges (\$)	Supply Charges (\$)	Total Charges (\$)	Rate (\$/Therm)
May-14	0.00	485.16	2.80	487.96	N/A
June-14	0.00	335.53	2.80	338.33	N/A
July-14	0.00	339.24	2.80	342.04	N/A
August-14	0.00	343.01	2.80	345.81	N/A
September-14	0.00	260.45	1.96	262.41	N/A
October-14	0.00	358.99	12.53	371.52	N/A
November-14	7,483.10	8,169.11	329.72	8,498.83	1.14
December-14	9,418.50	7,529.92	566.15	8,096.07	0.86
January-15	18,497.20	14,238.21	1,388.85	15,627.06	0.84
February-15	20,748.80	17,675.68	1,820.85	19,496.53	0.94
March-15	10,221.40	15,003.16	1,784.80	16,787.96	1.64
April-15	481.90	1,009.87	1,021.38	2,031.25	4.22
Total (12 Months)	66,851	65,748	\$ 6,937.44	\$ 72,685.77	\$ 1.09



For Service at: 199 Washington Ave. Carteret, NJ 07008

Account No.: 0

Meter No.:

Water & Sewer Service Delivery - Middlesex Water Company

Supplier -

Month	Total (\$)	Gallons	\$/Gallon
Jun-14			#DIV/0!
Sep-14			#DIV/0!
Jan-15			#DIV/0!
Apr-15			#DIV/0!
Total	\$ -	0.00	#DIV/0!

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

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

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

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

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

Energy.me Midwest LLC	(855) 243-7270	R/C/I
90 Washington Blvd	, , ,	
Bedminster, NJ 07921	www.energy.me	ACTIVE
Energy Plus Holdings LLC	(877) 866-9193	R/C
309 Fellowship Road		
East Gate Center, Suite 200		A CURINUE
Mt. Laurel, NJ 08054	www.energypluscompany.com	ACTIVE
Ethical Electric Benefit Co.	(888) 444-9452	R/C
d/b/a Ethical Electric		
100 Overlook Center, 2 <sup>nd</sup> Fl. Princeton, NJ 08540	www.ethicalelectric.com	ACTIVE
		R/C
Energy Service Providers, Inc., d/b/a New Jersey Gas &	(866) 568-0290	R/C
Electric		
1 Bridge Plaza fl. 2		
Fort Lee, NJ 07024	www.njgande.com	ACTIVE
FirstEnergy Solutions	(866) 625-7318	C/I
150 West State Street	_	
Trenton, NJ 08608	www.fes.com	ACTIVE
Gateway Energy Services	(866)348-4193	R/C
Corp.		
120 Wood Avenue Suite 611 Iselin, NJ 08830	www.directenergybusiness.com	ACTIVE
GDF SUEZ Energy	(866) 999-8374	C/I
<b>Resources NA, Inc.</b> 333 Thornall Street		
Sixth Floor		
Edison, NJ 08837	www.gdfsuezenergyresources.com	ACTIVE
GDF Suez Retail Energy	1-866-252-0078	R/C/I
Solutions LLC d/b/a THINK		
ENERGY		
333 Thornall St. Sixth Floor	www.mythinkenergy.com	ACTIVE
Edison, NJ 08819	(000) 455 5 155	
Glacial Energy of New	(888) 452-2425	C/I
Jersey, Inc. 21 Pine Street, Suite 237		
Rockaway, NJ 07866	www.glacialenergy.com	ACTIVE
Global Energy Marketing LLC	(800) 542-0778	R/C/I
129 Wentz Avenue		ACTIVE
Springfield, NJ 07081	www.globalp.com	
<u>.</u> .	<u> </u>	

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Woodruff Energy US LLC 73 Water Street, P.O. Box 777 Bridgeton, NJ 08302	856-455-1111 800-557-1121 www.woodruffenergy.com	C/I ACTIVE			
XOOM Energy New Jersey, LLC 744 Broad Street. 16th Floor Newark, NJ 07102	888-997-8979  www.xoomenergy.com	R/C/I ACTIVE			
Your Energy Holdings, LLC One International Boulevard Suite 400 Mahwah, NJ 07495-0400	855-732-2493 R/ www.thisisyourenergy.com AC7				

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Description	QTY	Manufacturer Name	Model No.	Serial No.	Equipment Type / Utility	Capacity/Size	Efficiency	Location	Areas/Equipment Served	Date Installed	Remaining Useful Life (years)	Other Info.
P-1	1	Bell & Gossett	R340	422701-002	Hot water pump	7.50 HP	NEMA 91.7%	Boiler Room	Building (Annex)	N/A	N/A	
P-2	1	Bell & Gossett	R340	422701-003	Hot water pump	7.50 HP	NEMA 91.7%	Boiler Room	Building (Annex)	N/A	N/A	
DHW-1	1	Aerco	KC Series	G-08-2546	DHW Boiler	1,000,000 BTU/hr	93%	Boiler Room	Building	2008	18	
DHW-2	1	Aerco	KC Series	G-08-2545	DHW Boiler	1,000,000 BTU/hr	93%	Boiler Room	Building	2008	18	
Cond. Unit	1	Bell & Gossett	Hoffman Watchman	N/A	Condensate Pump	N/A	N/A	Boiler Room	Building	N/A	N/A	
C.F.T1	1	Not Available	Not Available	Not Available	Boiler Condensate Feedwater tank	Not Available	Not Available	Boiler Room	Building	N/A	N/A	
B-1	1	Cleaver Brooks	CB-700-250-015	0L106350	Boiler	10,206,000 BTU/hr	~80%	Boiler Room	Building	2007	17	
B-2	1	Cleaver Brooks	CB-700-250-015	0L106351	Boiler	10,206,000 BTU/hr	~80%	Boiler Room	Building	2007	17	
HE-1	1	Bell & Gossett	OSU-107-2	995664-01	Heat Exchanger	N/A	N/A	Boiler Room	Building	N/A	N/A	
Air Compressor	1	Saylor-Beall	X-720-80-ICD	3-3-4-M08	Air Compressor	2 HP	N/A	Boiler Room	Building	N/A	N/A	
UV-1	~25	Nesbitt	Not Available	Not Available	Unit Ventilator	1/2 HP	N/A	Classrooms	Building	N/A	N/A	
RTU-1	1	AAON	Not Available	Not Available	Packaged Rooftop Unit	N/A	N/A	Roof	Cafeteria	N/A	N/A	
RTU-2	1	Reznor	Not Available	Not Available	Packaged Rooftop Unit	N/A	N/A	Roof	Auditorium	N/A	N/A	
RTU-3	1	McQuay	050SHC	Not Available	Packaged Rooftop Unit	N/A	N/A	Roof	Building	N/A	N/A	
UH-1	1	Dayton	Not Available	Not Available	Electric Unit Heater	N/A	N/A	Kitchen	Kitchen	N/A	N/A	
DHW-3	1	Rheem	81VP20S	RH Q241315550	Electric DHW Heater	20 gallons / 2 kW	N/A	Kitchen	Kitchen	2013	13	
CU-	1	Fujitsu	AOU30CLX	DEN 004063	Split Condensing Unit	30,700 BTUH	N/A	Building	Building	2004	5	
MAU-1	1	ArcoAire	RGS150HFCA0AAAA	G120140230	Packaged MAU	140,000	10.8 EER	Outside	Kitchen	2012	12	
F-1, 2	2	Not Available	Not Available	Not Available	Gas-fired Residential Furnace	~100000	N/A	Locker Rooms	Locker Rooms	N/A	N/A	
DHW-4, 5	2	A.O. Smith	BT 100 230	MJ96-0582995-230	N/A	N/A	N/A	Locker Rooms	Locker Rooms	N/A	N/A	



Rate of Discount (used for NPV)	
---------------------------------	--

Utility C	Costs	Yearly Usage	Metric Ton Carbon Dioxide Equivalent	Building Area	А	nnual Utility Co	st
\$ 0.146	\$/kWh blended		0.000420205	166,918	Electric	Natural Gas	Fuel Oil
\$ 0.089	\$/kWh supply	647,566	0.000420205		\$ 94,304	\$ 72,686	
\$ 3.01	\$/kW	476.0	0				
\$ 1.09	\$/Therm	66,851	0.00533471				
\$ 5.56	\$/kgals	1	0				
	r./○-I						

		C	arteret	High So	chool																		
Recommend?		Item			S	avings			Cost	Simple	Life	Equivalent CO2	NJ Smart Start	Direct Install	Payback w/		Simple Pro	jected Lifetime S	Savings		ROI	NPV	IRR
Y or N			kW	kWh	therms	No. 2 Oil gal	Water kgal	\$		Payback	Expectancy	(Metric tons)	Incentives	Eligible (Y/N)	Incentives	kW	kWh	therms	kgal/yr	\$		ı	
Υ	ECM-1	Install Attic Insulation to R-38	0.0	22,403	2,168	0	0	5,628	\$ 117,464	20.9	25.0	21.0		N	20.9	0.0	560,075	54,211	0	\$ 140,699	0.2	(\$19,463)	1.4%
Υ	ECM-2	Replace Door Sweeps & Seals	0.0	18	22	0	0	26	\$ 1,244	47.0	15.0	0.1		N	47.0	0.0	269	329	0	\$ 397	(0.7)	(\$929)	-11.8%
N	ECM-3	Complete Steam to Hot Water Conversion	0.0	0	14,874	0	0	16,168	\$ 4,302,457	266.1	20.0	79.3	\$ 2,000	N	266.0	0.0	0	297,478	0	\$ 323,359	(0.9)	(\$4,059,919)	-17.6%
Υ	ECM-4	Eliminate Hot Water Generator and Install Condensing HW Boiler	0.0	0	9,228	0	0	10,031	\$ 317,043	31.6	10.0	49.2	\$ 1,500	N	31.5	0.0	0	92,279	0	\$ 100,307	(0.7)	(\$229,979)	-16.8%
Υ	ECM-5	Install VFDs onto HW Pumps	3.6	1,198	0	0	0	237	\$ 11,618	49.0	15.0	0.5		N	49.0	54.1	17,963	0	0	\$ 4,577	(0.6)	(\$8,790)	-12.1%
Υ	ECM-6	Replace Stadium Gas DHW Heaters w/ Condensing DHW Heaters	0.0	0	2,097	0	0	2,279	\$ 17,696	7.8	15.0	11.2	\$ 600	N	7.5	0.0	0	31,453	0	\$ 34,189	0.9	\$10,114	10.2%
Υ	ECM-7	Install Walk-In Freezer Controllers	0.0	9,142	0	0	0	1,335	\$ 22,275	16.7	10.0	3.8	\$ 200	N	16.5	0.0	91,420	0	0	\$ 13,347	(0.4)	(\$10,690)	-8.2%
N	ECM-L1	Lighting Replacements / Upgrades	56.2	196,979	0	0	0	19,562	\$ 447,609	22.9	10.0	82.8	\$ 27,460	N	21.5	562.0	1,969,790	0	0	\$ 307,889	(0.3)	(\$253,281)	-11.9%
N	ECM-L2	Install Lighting Controls (Add Occupancy Sensors)	0.0	64,134	0	0	0	5,708	\$ 51,300	9.0	10.0	26.9	\$ 3,800	N	8.3	0.0	641,340	0	0	\$ 93,636	0.8	\$1,190	3.5%
Υ	ECM-L3	Lighting Replacements with Controls (Occupancy Sensors)	56.2	233,116	0	0	0	22,778	\$ 498,909	21.9	10.0	98.0	\$ 31,260	N	20.5	562.0	2,331,160	0	0	\$ 360,649	(0.3)	(\$273,348)	-11.3%
		Total (Not Including ECMs L1, L2)	59.8	265,876	28,389	0	0	\$ 58,482	\$ 5,288,706	90.4	12.0	363	\$ 35,560		89.8	616	3,000,887	475,750	-	\$ 977,524	(0.8)	(\$4,671,017)	-22.5%
		Recommended Measures (highlighted green above)	59.8	265,876	13,515	0	0	\$ 42,314	\$ 986,249	23.3	11.1	184	\$ 33,560	0	22.5	616	3,000,887	178,272	-	\$ 654,165	(0.3)	(\$561,174)	-10.4%
		% of Existing	13%	41.06%	20.22%	0	0		•	-	-	-	-	-	-				•				

		City:	Newa	rk, NJ	1		
	Occupied F	Hours/Week	70	70	70	70	50
			Building	Auditorium	Gymnasium	Library	Classrooms
	Enthalpy		Operating	Occupied	Occupied	Occupied	Occupied
Temp	h (Btu/lb)	Bin Hours	Hours	Hours	Hours	Hours	Hours
102.5							
97.5	35.4	6	3	3	3	3	2
92.5	37.4	31	13	13	13	13	9
87.5	35.0	131	55	55	55	55	39
82.5	33.0	500	208	208	208	208	149
77.5	31.5	620	258	258	258	258	185
72.5	29.9	664	277	277	277	277	198
67.5	27.2	854	356	356	356	356	254
62.5	24.0	927	386	386	386	386	276
57.5	20.3	600	250	250	250	250	179
52.5	18.2	730	304	304	304	304	217
47.5	16.0	491	205	205	205	205	146
42.5	14.5	656	273	273	273	273	195
37.5	12.5	1,023	426	426	426	426	304
32.5	10.5	734	306	306	306	306	218
27.5	8.7	334	139	139	139	139	99
22.5	7.0	252	105	105	105	105	75
17.5	5.4	125	52	52	52	52	37
12.5	3.7	47	20	20	20	20	14
7.5	2.1	34	14	14	14	14	10
2.5	1.3	1	0	0	0	0	0
-2.5							
-7.5							

Multipliers	
Material:	1.027
Labor:	1.246
Equipment:	1.124

Heating System Efficiency	80%
Cooling Eff (kW/ton)	1.2

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

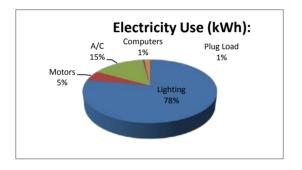
Co	Cooling							
Hours	4,333	Hrs						
Weighted Avg	68	F						
Avg	F							

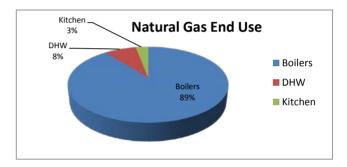
Carteret Board of Education CHA Project Number: 30201 Carteret High School

	Utility End Use Analysis					
Electric	ity Use (kWh):	Notes/Comments:				
647,566		Based on utility analysis				
503,954	Lighting	From Lighting Calculations				
33,566	Motors	Calculated				
96,047	A/C	Estimated				
4,000	Plug Load	Estimated				
-	Heating	Estimated				
10,000	Computers	Estimated				
-	Other	Remaining				
Natural Ga	s Use (Therms):	Notes/Comments:				
66,851		Based on utility analysis				
	Boilers	Therms/SF x Square Feet Served				
5,075	DHW	Based on utility analysis				
2,000	Kitchen	Based on utility analysis				

77.82% 5.18% 14.83% 0.62% 0.00% 1.54% 0.00% 100.00%

0.894167627 0.075915095 0.029917279





Carteret Board of Education CHA Project Number: 30201 Carteret Board Office

#### **ECM-1 Add Attic Insulation to R-38**

Existing: roof insulation assumed to be approximately R-9.

Proposed: Install R-30 or 9" fiberglass insulation between joists of the old ceiling to bring total R-value up to R-38

Heating System Efficiency Heating On Point Ex Occupied Htg Temp. 80% 55 \*F 70 \*F 35,000 SF Cooling System Efficiency Ex Occupied Clng Temp. Ex Unoccupied Clng Temp. 1.2 kW/ton Roof area to be insulated Existing Infiltration Factor
Proposed Infiltration Factor 0.06 cfm/SF 0.02 cfm/SF 74 \*F 74 \*F Existing U Value 0.111 Btuh/SF/°F Cooling Occ Enthalpy Setpoint 27.5 Btu/lb Ex Unoccupied Htg Temp. 70 \*F Cooling Electricity
Heating NG Cost Proposed U Value 0.026 Btuh/SF/°F Cooling Unocc Enthalpy Setpoint 27.5 Btu/lb \$ 0.685 \$/kWh \$ 1.25 \$/Therm

					EXISTING	PROPOSI	PROPOSED LOADS COOLING ENERGY			HEATING ENERGY		
					Occupied	Unoccupied	Occupied Inoccupie		d			
				Unoccupi								
		Existing		ed		Infiltration	Infiltratio		Existing	Proposed	U	Proposed
		Equipme	Occupied	Equipme		& Heat		n & Heat	Cooling	Cooling	Heating	Heating
Avg Ext Wall	Avg Outdoor	nt Bin	Equipment	nt Bin	Infiltration & Hea		Load	Load	Energy	Energy	Energy	Energy
Temp. Bins °F	Air Enthalpy	Hours	Bin Hours	Hours	Load BTUH	BTUH	BTUH	BTUH	kWh	kWh	Therms	Therms
Α		В	С	D	E	F	G	Н	ı	J	K	L
117.5	35.4	6	3	4	-243,72	21 -243,721	-64,493	-64,493	146	39	0	(
112.5	37.4	31	13	18	-243.14	,			754		0	(
107.5	35.0	131	55	76	-200,87	, -	,	/	2632		0	Č
102.5	33.0	500	208	292	-163.14			-43,408	8157		0	Ö
97.5	31.5	620	258	362	-129,54			-34,136	8032	2116	0	C
92.5	29.9	664	277	387	-94,60	9 -94,609	-24,414	-24,414	6282	1621	0	0
87.5	27.2	854	356	498	-49,47	1 -49,471	-11,293	-11,293	4225	964	0	C
82.5	24.0	927	386	541	11	2 112	3,310	3,310	0	0	1	38
77.5	20.3	600	250	350	54,91	3 54,913	19,652	19,652	0	0	412	147
72.5	18.2	730	304	426		0 0	0	0	0	0	0	C
67.5	16.0	491	205	286		0 0	0	0	0	0	0	C
62.5	14.5	656	273	383		0 0	0	0	0	0	0	C
57.5	12.5	1,023	426	597		0 0	0	0	0	0	0	C
52.5	10.5	734	306	428	107,67	78 107,678	29,155	29,155	0	0	988	267
47.5	8.7	334	139	195	138,44	3 138,443			0	0	578	156
42.5	7.0	252	105	147	169,20				0	0	533	144
37.5	5.4	125	52	73	199,97				0	0	312	85
32.5	3.7	47	20	27	230,73		- , -	- ,	0	0	136	37
27.5	2.1	34	14	20	261,50	- ,	-,	70,805	0	0	111	30
22.5	1.3	1	0	1	292,26	8 292,268	79,135	79,135	0	0	4	
TOTALS		8,760	3,650	5,110					30228	7825	3,075	906

Existing Roof Infiltration Existing Roof Heat Transfer Proposed Roof Infiltration Proposed Roof Heat Transfer 2,100 cfm 3,885 Btuh/°F 700 cfm 910 Btuh/°F

Savings	2,168	Therms	\$ 2,702
	22,403	kWh	\$ 15,346
•			\$ 18,048

Carteret Board of Education CHA Project Number: 30201 Carteret Board Office

ECM-1 Add Attic Insulation - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL	REMARKS	
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	REWARKS	
						\$ -	\$ -		\$ -		
R-30 9" fiberglass insulation	35,000	SF	\$ 1.200	\$ 1.000	\$ -	\$ 43,260	\$ 43,750	\$ -	\$ 87,010	Vendor quote	
						\$ -	\$ -	\$ -	\$ -		

Note: Cost estimates are for energy savings calculations only, do not use for procurement

\$ 87,010	Subtotal
\$ 30,454	35% Contingency
\$ 117,464	Total

ECM-2: Install Door Seals
Description: This ECM evaluates the thermal and electrical savings associate with adding door seals and sweeps to prevent infiltration of cold (or hot) outdoor air.

Heating System Efficiency Cooling System Efficiency Linear Feet of Door Edge Existing Infiltration Factor\*

1.20 kW/ton 10.75 LF 1.5 cfm/LF

Ex Occupied Clng Temp.
Ex Unoccupied Clng Temp.
Cooling Occ Enthalpy Setpoint
Cooling Unocc Enthalpy Setpoint

74 \*F 85 \*F 27.5 Btu/lb 27.5 Btu/lb Ex Occupied Htg Temp. Ex Unoccupied Htg Temp. Electricity Natural Gas



Proposed Infiltration Factor\*

1nfiltration Factor per Carrier Handbook of Air Conditioning System Design based on average door seal gap calculated below.

					EXISTING	LOADS	PROPOSE	D LOADS	COOLIN	G ENERGY	HEATING E	NERGY
					Occupied	Unoccupied	Occupied	Unoccupied				
Avg Outdoor Air Temp.	Avg Outdoor Air Enthalpy	Existing Equipment Bin Hours		Unoccupied Equipment Bin Hours	Door Infiltration Load BTUH	Door Infiltration	Door Infiltration	Door Infiltration Load BTUH	Existing Cooling Energy kWh	Proposed Cooling Energy kWh	Existing Heating Energy	Proposed Heating Energy
Bins °F	Air Enthalpy	Hours B	Hours C	Hours D	Load BTUH E	F F	G BIUH	H H	KWN	KVVN	therms K	therms
Α		В	C	U	-	г		п	'	J	, ,	_
102.5	0.0	0	0	0	1,995	1,995	599	599	0	0	0	
97.5	35.4	6	3	4	-574	-574	-172	-172	0	0	0	
92.5	37.4	31	13	18	-719	-719	-216	-216	2	1	0	
87.5	35.0	131	55	76	-543			-163	7	2	0	
82.5	33.0	500	208	292	-403	0	-121	0	8	3	0	
77.5	31.5	620	258	362	-294	0	-88	0	8	2	0	
72.5	29.9	664	277	387	0	0	0	0	0	0	0	
67.5	27.2	854	356	498	78		24	0	0	0	0	
62.5	24.0	927	386	541	165		50	13	0	0	1	
57.5	20.3	600	250	350	253	131	76	39	0	0	1	
52.5	18.2	730	304	426	340			65	0	0	2	
47.5	16.0	491	205	286	427	305		91	0	0	2	
42.5	14.5	656	273	383	514			118	0	0	4	
37.5	12.5	1,023	426	597	601	479	180	144	0	0	7	
32.5	10.5	734	306	428	688	566	206	170	0	0	6	
27.5	8.7	334	139	195	775			196	0	0	3	
22.5	7.0	252	105	147	862	740		222	0	0	2	
17.5	5.4	125	52	73	949		285	248	0	0	1	
12.5	3.7	47	20	27	1,036		311	274	0	0	1	
7.5	2.1	34	14	20	1,123	1,001	337	300	0	0	0	
2.5	1.3	1	0	1	1,210			327	0	0	0	
-2.5	0.0	0	0	0	1,297	1,176		353	0	0	0	
-7.5	0.0	0	0	0	1,384	1,263	415	379	0	0	0	
TOTALS	1	8.760	3.650	5.110			ı		26	8	31	

Existing Door Infiltration Existing Unoccupied Door Infiltration Proposed Door Infiltration Proposed Unoccupied Door Infiltration



Savings	22	therms	\$ 24
	18	kWh	\$ 3
			\$ 26

Total	21	49	140	0.196		10.75	8%	0.125
4a	3	7	20	0.125	all sides	2.5	100%	0.125
3b	3	7	20	0.125	all sides	2.5	100%	0.125
3a	3	7	20	0.125	all sides	2.5	100%	0.125
2b	3	7	20	0.25	all sides	0	100%	0
2a	3	7	20	0.25	all sides	0	100%	0
1b	3	7	20	0.25	bottom/seam	1.625	100%	0.25
1a	3	7	20	0.25	bottom/seam	1.625	100%	0.25
Door	(ft)	(ft)	(LF)	(in)	gap location	LF of gap	% door w/ gap	door (in)
_	Width	Height	Linear Feet	gap				Average gap for

Note: Doors labeled 'a', 'b', etc. are a part of the same door assembly.

ECM-2: Install Door Seals - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT		JNIT COST	_		TOTAL CC		TOTAL	REMARKS
·			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	
									\$ -	
Door Weatherization Seals & Sweeps	5	EA	\$ 40	\$ 115	\$ -	\$ 205	\$ 716	\$ -	\$ 922	RS Means 2012
						\$ -	\$ -	\$ -	\$ -	

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

\$ 922	Subtotal
\$ 323	35% Contingency
\$ 1,244	Total

### ECM-3: Convert Steam Heating System to Hydronic Heat w/ High Efficiency Condensing Boilers

Description: This ECM evaluates the changeover of 60% of the building (which is steam-heated) from steam to hot water. The analysis includes replacement of two (2) existing steam boilers with high efficiency condensing gas boilers; replacement of steam-heated unit ventilators with hot water unit ventilators; and the replacement of steam piping with hot water piping. The existing boiler efficiency is 80% (per NJBPU protocols) and the proposed boiler efficiency is 90% (average seasonal efficiency). Electrical power consumption due to pumps is considered to be the same for both the proposed system and the baseline system.

<u>Item</u>	<u>Value</u>	<u>Units</u>	<u>Formula/Comments</u>
Baseline Fuel Cost	\$ 1.09	/ Therm	Natural Gas
Baseline Fuel Cost		/ Gal	No. 2 Oil
		FORMUL	A CONSTANTS
Oversize Factor	0.8		
Hours per Day	24		
Design Outdoor Temp	14	F	
Infrared Conversion Factor	1.0		1.0 if Boiler, 0.8 if Infrared Heater
		E	XISTING
Capacity	10,200,000	btu/hr	approximate capacity of entire building
Heating Combustion Efficiency	76%		Weighted avg. of steam system and current hydronic system that employs a shell and tube heat exchanger
Heating Degree-Day	2,783	Degree-day	
Design Temperature Difference	75	F	
Fuel Conversion	100,000	btu/therm	
		PR	OPOSED
Capacity	10,200,000	btu/hr	
Efficiency	90%		
			AVINGS
Fuel Savings	14,874	Therms	NJ Protocols Calculation
Fuel Cost Savings	\$ 16,168		

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

ECM-3: Convert Steam Heating System to Hydronic Heat w/ High Efficiency Condensing Boilers

Multipliers		
	Material:	1.03
	Labor:	1.25
	Equipment:	1.12

Description	QTY	UNIT	l	JNIT COST	S	SUE	STOTAL COST		TOTAL COST	DEMVDKS
Description	ÿ	OIVII	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	TOTAL COST	KEWAKKS
Hydronic Heating System (boilers, piping, radiators & UVs)	100,151	SF	\$ 14	\$ 14		\$ 1,439,971	\$ 1,747,034	\$ -	\$ 3,187,005	2012 RS Means Square Foot Construction Costs

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

\$ 3,187,005	Subtotal
\$ 1,115,452	35% Contingency
\$ 4,302,457	Total

#### **ECM-4: Boiler Replacement**

Description: Currently the Annex, which constitutes about 40% of the building, is heated by hot water. This is created in a steam-to-hot water heat exchanger located in the Boiler Room. This ECM evaluates the removal of the heat exchanger and the installation of a high efficiency condensing gas hot water boiler. The existing boiler + ht. exchanger efficiency is conservatively estimated at 70% and the proposed boiler efficiency at 90% (average seasonal efficiency). Existing base mounted pumps could be re-employed to circulate the hot water around the Annex

<u>Item</u>	<u>Value</u>	<u>Units</u>	Formula/Comments
Baseline Fuel Cost	\$ 1.09	/ Therm	Natural Gas
Baseline Fuel Cost		/ Gal	No. 2 Oil
	FORMULA	CONSTANTS	
Oversize Factor	0.8		
Hours per Day	24		
Design Outdoor Temp	14	F	
Infrared Conversion Factor	1.0		1.0 if Boiler, 0.8 if Infrared Heater
	EXIS	STING	
Capacity	4,080,000	btu/hr	approximate capacity of the Annex
Heating Combustion Efficiency	70%		
Heating Degree-Day	2,783	Degree-day	
Design Temperature Difference	75	F	
Fuel Conversion	100,000	btu/therm	
	PRO	POSED	
Capacity	4,080,000	btu/hr	
Efficiency	90%		Operates in shoulder months only
	SAV	/INGS	
Fuel Savings	9,228	Therms	
Fuel Cost Savings	\$ 10,031		

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

### **Algorithms**

Gas Savings (Therms)

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

### Definition of Variables

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

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

CAPY<sub>Oi</sub> = Total input capacity of the qualifying furnace, boiler or heater in Btu/hour

 $HDD_{mod} = HDD$  by zone and building type

24 = Hours/Day

 $\Delta T$  = design temperature difference

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

EFF<sub>O</sub> = Efficiency of qualifying heater(s) (AFUE %)

EFF<sub>B</sub> = Efficiency of baseline heaters (AFUE %)

ICF = Infrared Compensation Factor (ICF = 0.8 for IR Heaters, 1.0 for furnaces/boilers)<sup>2</sup>

### **Furnaces and Boilers**

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

### Sources:

- KEMA, Smartstart Program Protocol Review. 2009.
   <a href="http://www.spaceray.com/1\_space-ray\_faqs.php">http://www.spaceray.com/1\_space-ray\_faqs.php</a>

Adjusted Heating Degree Days by Building Type

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

Heating Degree Days and Outdoor Design Temperature by Zone

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

ECM-4: Boiler Replacement - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY UNIT		Į	JNIT COSTS		SUB	TOTAL CC	STS	TOTAL COST	DEMARKS
Description	QII	ONT	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	TOTAL COST	REWARKS
Aerco BMK2000 w/ condensate	2	EA	\$ 32,000	\$ 12,000		\$65,728	\$29,904	\$ 1,000	\$ 96,632	Vendor Estimate
Flue Installation	2	LS	\$25,000.0	\$25,000.00		\$51,350	\$62,300	\$ -	\$ 113,650	Vendor Estimate
controls	2	EA	\$ 1,000.0	\$ 1,500.00		\$ 2,054	\$ 3,738	\$ -	\$ 5,792	RS Means 2012
Miscellaneous Electrical	2	LS	\$ 1,500	\$ 1,500		\$ 3,081	\$ 3,738	\$ -	\$ 6,819	RS Means 2012
Miscellaneous HW Piping	2	LS	\$ 4,000	\$ 1,500		\$ 8,216	\$ 3,738	\$ -	\$ 11,954	RS Means 2012
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

\$ 317,043	
\$ 82.196	35% Contingency
\$ 234,847	Subtotal

#### ECM-5: Install High Efficiency Motors & Variable Speed Drives

Description: This ECM evaluates the energy (electrical) savings associated with replacing existing 7.5 HP heating pumps motors with high efficiency motors (based on ASHRAE 2010 NEMA ratings) and adding variable frequency drives to control motor speed based on actual load verses constant volume / constant flow. Pumps operate in a lead/ lag fashion, therefore run hours are 50% for each pump.

#### Variable Inputs

Electric Rate \$0.15 \$/kWh
Demand Rate \$0.09 \$/kW

	MOTOR SCHEDULE								Savings Factor Existing Motor Energy Proposed Motor Energy					Energy Savings				
	Upgrade Existing New Motor Annual						Demand	Energy Savings	Demand Energy	Electrical Energy	Demand Energy	Electrical Energy	Peak Demand	Ann Ene Savi	ergy			
Motor ID	Motor Type	Qty	HP	Total HP	Motor	Load Factor	Motor Eff.	Eff.	Hours	Savings Factor	Factor	(kW)	(kWh)	(kW)		Savings (kW)	(kW	۷h)
HWP-1,2	HW	1	7.5	7.5	N	0.75	91.7%	93.6%	2,213	0.216	0.240	4.6	10,125	1.0	8,928	3.6		1,198
															Total:	3.6	1,	,197.5
																\$ 4	\$	175
																	¢	170

Savings calculation formulas are taken from NJ Protocols document for VFDs

### ECM-5: Install Variable Speed Drives - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.00

Description	QTY	UNIT	l	JNIT COST	_	SUE	STOTAL CO		TOTAL	REMARKS
Description		OINII	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	KEWAKKO
						\$ -	\$ -	\$ -	\$ -	
VFDs for Hot Water Pumps	2	ea	\$ 2,025	\$ 525		\$ 4,159	\$ 1,308	\$ -	\$ 5,468	RS Means 2012
Motors -7.5 HP	2	ea	\$ 550	\$ 100		\$ 1,130	\$ 249	\$ -	\$ 1,379	RS Means 2012
Electrical - misc.	2	ls	\$ 250	\$ 500		\$ 514	\$ 1,246	\$ -	\$ 1,760	RS Means 2012
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

\$ 8,606	Subtotal
\$ 3,012	35% Contingency
\$ 11,618	Total

### ECM-6: Replace Gas-Fired DHW Heaters w/ Tankless Condensing Gas-Fired DHW Heaters

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

<u>Item</u>	<u>Value</u>	<u>Units</u>	Formula/Comments
Avg. Monthly Utility Demand by Water Heater	420	Therms/month	Calculated from utility bill
Total Annual Utility Demand by Water Heater	504,000	MBTU/yr	1therm = 100 MBTU
Existing DHW Heater Efficiency	78%		Per manufacturer nameplate
Total Annual Hot Water Demand (w/ standby losses)	393,120	MBTU/yr	
Existing Tank Size	80	Gallons	Per manufacturer nameplate
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	140	°F	Per building personnel
Room Temperature	72	°F	
Standby Losses (% by Volume)	2.5%		( 2.5% of stored capacity per hour, per U.S. Department of Energy )
Standby Losses (Heat Loss)	1.2	MBH	
Annual Standby Hot Water Load	10,549	MBTU/yr	
New Tank Size	0	Gallons	Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Hot Water Piping System Capacity	5	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	140	°F	
Room Temperature	72	°F	
Standby Losses (% by Volume)	2.5%		( 2.5% of stored capacity per hour, per U.S. Department of Energy )
Standby Losses (Heat Loss)	0.1	MBH	
Annual Standby Hot Water Load	621	MBTU/yr	
Total Annual Hot Water Demand	383,192	MBTU/yr	
Proposed Avg. Hot water heater efficiency	96%		Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Proposed Fuel Use	3,992	Therns	Standby Losses and inefficient DHW heater eliminated
Utility Cost	\$1.09	\$/Therm	
Existing Operating Cost of DHW	\$5,478	\$/yr	
Proposed Operating Cost of DHW	\$4,339	\$/yr	

### **Savings Summary:**

Utility	Energy	Cost
	Savings	Savings
Therms/yr	1,048	\$1,140

### ECM-6: Replace N.G. Water Heaters with Condensing DHW Heaters - Cost

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

Description	QTY	UNIT	l	JNIT COST	S	SUE	STOTAL CO	STS	TOTAL	REMARKS
Description		OINII	MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.	COST	REMARKS
DHW Heater Removal	2	LS		\$ 250		\$ -	\$ 623	\$ -	\$ 623	RS Means 2012
High Efficiency Gas-Fired DHW Heater	2	EA	\$ 4,000	\$ 280		\$ 8,216	\$ 698	\$ -	\$ 8,914	RS Means 2012
Miscellaneous Electrical	2	LS	\$ 300			\$ 616	\$	\$ -		RS Means 2012
Venting Kit	2	EA	\$ 450	\$ 650		\$ 924	\$ 1,620	\$ -	\$ 2,544	RS Means 2012
Miscellaneous Piping and Valves	2	LS	\$ 200			\$ 411	\$	\$ -	\$ 411	RS Means 2012

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

\$ 13,108	Subtotal
\$ 4,588	35% Contingency
\$ 17,696	Total

### ECM-7: Walk-in Cooler & Freezer EC Motor Retrofits

#### ECM Description:

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

### **Utility Cost**

\$0.15 \$/kWh Blended

EXISTING CONDITIONS		
Walk-In Freezer(s		
Existing Freezer Controls?	N	
Quantity of Walk-In Freezers	1	
Nameplate Amps of Freezer Evaporator Fan	4	AmpsEF
Nameplate Volts of Freezer Evaporator Fan	280	VoltsEF
Phase of Evaporator Fan	1	PhaseEl
Power Factor of Evaporator Fan	0.55	PFEF
Operating Hours	8,760 hrs	
Load Reduction	65%	LR
Electricity Savings (Evaporator Fan)	3,157 kWh	kWhEF
Electricity Savings (Evaporator Fan Reduced Heat)	1,414 kWh	kWhRH
Total Walk-In Freezer(s) Electricity Savings	4,571 kWh	
Walk-In Cooler(s		
Existing Cooler Controls?	N	
Quantity of Walk-In Coolers	1	
Nameplate Amps of Cooler Evaporator Fan	4	
Nameplate Volts of Cooler Evaporator Fan	280	
Phase of Evaporator Fan	1	
Power Factor of Evaporator Fan	0.55	
Operating Hours Load Reduction	8,760 hrs 65%	
Load Neddellon	0376	
Electricity Savings (Evaporator Fan)	3,157 kWh	
Electricity Savings (Evaporator Fan Reduced Heat)	1,414 kWh	
Total Walk-In Cooler(s) Electricity Savings	4,571 kWh	
SAVINGS		
Total Electricity Savings	9,142 kWh	
Total Cost Savings	\$ 1,335	
Estimated Cost	\$ 22,275	
Simple Payback	16.7 years	

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

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

Multipliers	
Material:	1.03
Labor:	1.25
Equipment:	1.12

### ECM-7: Walk-in Cooler & Freezer EC Motor Retrofits - Cost

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

<sup>\*\*</sup>Cost Estimates are for Energy Savings calculations only, do not use for procurement

\$16,500	Subtotal
\$ 5,775 <b>\$ 22,275</b>	35% Contingency
\$ 22,275	Total

#### New Jersey Pay For Performance Incentive Program

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

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

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

Total Building Area (Square Feet)	166,918
Is this audit funded by NJ BPU (Y/N)	Yes
Board of Public Utilites (BPU)	

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

	Annua	l Utilities
	kWh	Therms
Existing Cost (from utility)	\$94,304	\$72,686
Existing Usage (from utility)	647,566	66,851
Proposed Savings	265,876	13,515
Existing Total MMBtus	8	,895
Proposed Savings MMBtus	2.	,259
% Energy Reduction	25	5.4%
Proposed Annual Savings	\$4:	2.314

	Min (Savi	ngs = 15%)	Increase (S	avings > 15%)	Max Ince	ntive	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 \$	3
	Elec	Gas	Total
			\$8,346
Incentive #1	\$0	\$0	\$8,346
Incentive #2	\$29,246	\$16,894	\$46,140
Incentive #3	\$29,246	\$16,894	\$46,140
Total All Incentives	\$58,493	\$33,788	\$100,627

\$986,249

		Allowable Incentive
% Incentives #1 of Utility Cost*	5.0%	\$8,346
% Incentives #2 of Project Cost**	4.7%	\$46,140
% Incentives #3 of Project Cost**	4.7%	\$46,140
T-4-1 Filmible In	646	20.007

% Incentives #1 of Utility Cost*	5.0%	\$8,346			
% Incentives #2 of Project Cost**	4.7%	\$46,140	_		
% Incentives #3 of Project Cost**	4.7%	\$46,140		Project Payba	ck (years)
Total Eligible Incentives***	\$10	00,627		w/o Incentives	w/ Incentives
Project Cost w/ Incentives	\$88	35,623	] [	23.3	20.9
			-		

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

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

Total Project Cost

<sup>\*\*</sup> Maximum allowable amount of Incentive #2 is 25% of total project cost.

<sup>\*\*\*</sup> 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

ECM-L1 Lighting Replacements

-	zem z. zignang nep	100011101110								
ſ	Budgetary		Annual Ut	ility Savings		Estimated	Total	New Jersey	Payback	Payback
ſ									(without	
L	Cost					Maintenance	Savings	Incentive	incentive)	(with incentive)
ſ						Savings				
ſ	\$	kW	kWh	therms	\$	\$	\$	\$	Years	Years
I	\$447,609	56.2	196,979	0	\$19,562	0	\$19,562	\$27,460	22.9	21.5

<sup>\*</sup>Incentive based on New Jersey Smart Start Prescriptive Lighting Measures

ECM-L2 Install Occupancy Sensors

-	zom zz motan occup	and, concerc								
	Budgetary		Annual Ut	ility Savings		Estimated	Total	New Jersey	Payback	Payback
									(without	
L	Cost					Maintenance	Savings	Incentive	incentive)	(with incentive)
						Savings				
	\$	kW	kWh	therms	\$	\$	\$	\$	Years	Years
	\$51,300	0.0	64,134	0	\$5,708	0	\$5,708	\$3,800	9.0	8.3

<sup>\*</sup>Incentive based on New Jersey Smart Start Prescriptive Lighting Measures

ECM-L3 Lighting Replacements with Occupancy Sensors

Budgetary		Annual Ut	ility Savings		Estimated	Total	New Jersey	Payback	Payback
								(without	
Cost					Maintenance	Savings	Incentive	incentive)	(with incentive)
					Savings				
\$	kW	kWh	therms	\$	\$	\$	\$	Years	Years
\$498,909	56.2	233,116	0	\$22,778	0	\$22,778	\$31,260	21.9	20.5

<sup>\*</sup>Incentive based on New Jersey Smart Start Prescriptive Lighting Measures

12/10/2015 Page 1, Summary

Cost of Electricity:

\$0.089 \$3.01 \$/kW

		EXISTING CONDITIONS										
	Area Deceriation	Hoose	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per	kW/Space	Exist Control	Annual Hours	Annual kWh	Retrofit Control	
Field	Area Description Unique description of the location - Room number/Room	Usage Describe Usage Type	No. of	Lighting Fixture Code	Code from Table of Standard	Fixture Value from	(Watts/Fixt) * (Fixt	Pre-inst. control		(kW/space) *	Retrofit control device	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures before the retrofit		Fixture Wattages	Table of Standard Fixture	No.)	device	annual hours for the usage group			
202	Ground Floor Main Entrance	Hallways	1	2T 17 R F 4 (ELE)	F24ILL	61	0.06	SW	4368	266	C-OCC	
202 55LED	Main Entrance Vestibule  Main Lobby	Hallways Hallways	9	2T 17 R F 4 (ELE) 2T 17 R F 3 (ELE)	F24ILL F23ILL	61 47	0.06 0.42	SW SW	4368 4368	266 1.848	C-OCC	
40LED	Nurse Office	Offices	10	T 32 R F 2 (ELE)	F42LL	60	0.60	SW	3024	1,814	C-OCC	
5LED	Nurse Office Copier Room	Offices	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.18	SW	3024	544	C-OCC	
5LED 39	Nurse Office Bath Room Nurse Office Storage	Restroom Storage Areas	1 1	2T 32 R F 2 (u) (ELE) 2' 17 W F 2 (ELE)	FU2LL F22ILL	60	0.06	SW SW	2688 2688	161 89	C-OCC C-OCC	
40LED	Exam Room 1	Offices	1	T 32 R F 2 (ELE)	F42LL	60	0.06	SW	3024	181	C-OCC	
40LED	Exam Room 2	Offices	1	T 32 R F 2 (ELE)	F42LL	60	0.06	SW	3024	181	C-OCC	
40LED 5LED	Exam Room 3  Nurse Office Bath Room	Offices Restroom	2	T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42LL FU2LL	60	0.06 0.12	SW SW	3024 2688	181 323	C-OCC C-OCC	
15LED	Nurse Office Storage	Storage Areas	2	S 32 C F 2 (ELE)	F42LL	60	0.12	SW	2688	323	C-OCC	
32LED	Stair to Nurse Room	Storage Areas	1	1T 32 R F 2 (ELÉ)	F42LL	60	0.06	SW	2688	161	C-OCC	
185LED	Storage next to the small stair to Nurse Room	Storage Areas	2	T 40 R F 4 (ELE)	F44SE	172	0.34	SW	2688	925	C-OCC	
32LED 40LED	Restroom Office Space Next to Nurse Office	Restroom Offices	1 4	1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.06 0.24	SW SW	2688 3024	161 726	C-OCC C-OCC	
40LED	Small Office 1	Offices	2	T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3024	363	C-OCC	
33	Small Office 1 Floor Lamp	Offices	3	13 W CF 1	CFQ13/1-L	15	0.05	SW	3024	136	C-OCC	
40LED 33	Small Office 2 Small Office 2	Offices Offices	2	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	60 15	0.12 0.02	SW SW	3024 3024	363 45	C-OCC	
40LED	Small Office 3	Offices	2	T 32 R F 2 (ELE)	F42LL	60	0.02	SW	3024	363	C-OCC	
33	Small Office 3	Offices	3	13 W CF 1	CFQ13/1-L	15	0.05	SW	3024	136	C-OCC	
40LED 35LED	Pathways Office Pathways Office	Offices Offices	3	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60 90	0.18 0.09	SW SW	3024 3024	544 272	C-OCC	
40LED	Pathways Small Office	Offices	2	T 32 R F 2 (ELE)	F43ILU2 F42LL	60	0.09	SW	3024	363	C-OCC	
35LED	Pathways Small Office	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	3024	544	C-OCC	
40LED	Pathways Conference Room	Conference	6	T 32 R F 2 (ELE)	F42LL	60	0.36	SW	2016	726	C-OCC	
185LED 40LED	Hallway Instrumental Music	Hallways Classrooms	8 4	T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F44SE F42LL	172 60	1.38 0.24	SW SW	4368 3360	6,010 806	C-OCC	
40LED	Instrumental Music Office	Offices	2	T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3024	363	C-OCC	
40LED	Instrumental Music Storage	Storage Areas	2	T 32 R F 2 (ELE)	F42LL	60	0.12	SW	2688	323	C-OCC	
40LED	R24 Restroom	Classrooms Restroom	8	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60	0.48 0.12	SW SW	3360 2688	1,613 323	C-OCC	R22 is inaccessible
33	Closet	Storage Areas	1	13 W CF 1	CFQ13/1-L	15	0.02	SW	2688	40	C-OCC	
15LED	Cafeteria	Cafeteria	80	S 32 C F 2 (ELE)	F42LL	60	4.80	SW	2688	12,902	C-OCC	Light facing up and invisible
35LED 35LED	Kitchen Kitchen Office	Kitchen Offices	13	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.17 0.36	SW SW	2688 3024	3,145 1,089	C-OCC C-OCC	
5LED	Restroom	Restroom	1	2T 32 R F 2 (u) (ELE)	F43ILL/2 FU2LL	90	0.06	SW	2688	1,089	C-0CC	
5LED	Closet	Storage Areas	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	2688	161	C-OCC	
121	Back Closet	Storage Areas	1	W 34 P F 4	F44EE	144	0.14	SW	2688	387	C-OCC	
3 35LED	Back Closet Dishwash Room	Storage Areas Kitchen	1 3	W 34 W F 1 (MAG) T 32 R F 3 (ELE)	F41EE F43ILL/2	43 90	0.04 0.27	SW SW	2688 2688	116 726	C-OCC C-OCC	
32LED	Dishwash Room	Kitchen	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2688	161	C-OCC	
5LED	Dishwash Room	Kitchen	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	2688	161	C-OCC	
20LED 35LED	Stair Stair	Hallways Hallways	2	S 28 P F 1 (ELE) T 32 R F 3 (ELE)	F41ILL F43ILL/2	31 90	0.06	SW SW	4368 4368	271 393	C-OCC	
35LED	Hallway	Hallways	1	T 32 R F 3 (ELE)	F43ILL/2	90	0.09	SW	4368	393	C-OCC	
61LED	Hallway	Hallways	3	T 34 R F 3 (MAG)	F43EE	115	0.35	SW	4368	1,507	C-OCC	
30 5LED	Auditorium Auditorium	Auditorium Auditorium	14	1 B 96 C F 2 (MAG) 2T 32 R F 2 (u) (ELE)	F82EHS FU2LL	227 60	3.18 0.48	SW SW	2688 2688	8,542 1,290	C-OCC C-OCC	facing up
32LED	Hallway	Hallways	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	4368	2,097	C-OCC	
32LED	Boiler Room	Mechanical Room	11	1T 32 R F 2 (ELE)	F42LL	60	0.66	SW	8736	5,766	C-OCC	
46LED 32LED	Boiler Room Office	Mechanical Room Offices	6	W 32 P F 2 (ELE) 1T 32 R F 2 (ELE)	F42ILL F42LL	59 60	0.06 0.36	SW SW	8736 3024	515 1,089	C-OCC	
32LED 32LED	Office	Offices	6	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.36	SW	3024	1,089	C-0CC	
35LED	Athelic Director	Offices	4	T 32 R F 3 (ELE)	F43ILL/2	90	0.36	SW	3024	1,089	C-OCC	
32LED	Room 4	Offices	13	1T 32 R F 2 (ELE)	F42LL F44SE	60	0.78	SW	3024	2,359	C-OCC	
85LED 32LED	Room 6 Office	Offices Offices	12	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE)	F44SE F42LL	172 60	2.06 0.06	C-OCC SW	3024 3024	6,242 181	NONE C-OCC	
35LED	Apt Classroom 10	Classrooms	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	3360	1,814	C-OCC	
35LED	Apt Classroom 10	Classrooms	6	T 32 R F 3 (ELE)	F43ILL/2	90	0.54	SW	3360	1,814	C-OCC	
32LED 32LED	Closet Girls Restroom	Storage Areas Restroom	1 2	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.06 0.12	SW SW	2688 2688	161 323	C-OCC	
32LED 32LED	1st Floor Room129	Classrooms	12	1T 32 R F 2 (ELE)	F42LL F42LL	60	0.12	SW	3360	2,419	C-0CC	
32LED	Room 127	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
32LED	Room 127	Classrooms	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3360	403	0.000	
35LED 32LED	Office 125	Offices Classrooms	14	T 32 R F 3 (ELE) 1T 32 R F 2 (ELE)	F43ILL/2 F42LL	90	0.27 0.84	SW SW	3024 3360	816 2,822	C-OCC	
32LED	123	Classrooms	14	1T 32 R F 2 (ELE)	F42LL	60	0.84	SW	3360	2,822	C-OCC	
185LED	Restroom	Restroom	2	T 40 R F 4 (ELE)	F44SE	172	0.34	SW	2688	925	C-OCC	
35LED 20LED	Book Storage Restroom	Storage Areas Restroom	2	T 32 R F 3 (ELE) S 28 P F 1 (ELE)	F43ILL/2 F41ILL	90	0.36 0.06	SW SW	2688 2688	968 167	C-OCC C-OCC	
TALLE										3,226	C-0CC	
32LED	124A	Classrooms	16	1T 32 R F 2 (ELE)	F42LL	60	0.96	SW	3360	3,220 1	U-UUU	

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Cost of Electricity:

\$0.089 \$/kWh \$3.01 \$/kW

					EVICTING CON	DITIONS						1
<b>-</b>			No. of		EXISTING CON	Watts per					Retrofit Control	
	Area Description	Usage	Fixtures	Standard Fixture Code	Fixture Code	Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh		
Field	Unique description of the location - Room number/Room	Describe Usage Type	No. of	Lighting Fixture Code	Code from Table of Standard	Value from	(Watts/Fixt) * (Fixt	Pre-inst. control	Estimated	(kW/space) *	Retrofit control device	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures		Fixture Wattages	Table of	No.)	device		(Annual Hours)		
			before the retrofit			Standard Fixture			the usage group			
			retiont			Wattages						
185LED	126	Classrooms		T 40 R F 4 (ELE)	F44SE	172	1.03	SW	3360	3,468	C-OCC	
32LED 40LED	128 128	Classrooms Classrooms	8	1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.48 0.24	SW SW	3360 3360	1,613 806	C-OCC	
33	Restroom	Restroom		13 W CF 1	CFQ13/1-L	15	0.02	SW	2688	40	C-OCC	
20LED	storage	Storage Areas	1	S 28 P F 1 (ELE)	F41ILL	31	0.03	SW	2688	83	C-OCC	
185LED	112	Classrooms	6	T 40 R F 4 (ELE)	F44SE	172	1.03	C-OCC	3360	3,468	NONE	
185LED 185LED	110 108	Classrooms Classrooms	6	T 40 R F 4 (ELE) T 40 R F 4 (ELE)	F44SE F44SE	172 172	1.03 1.03	C-OCC	3360 3360	3,468 3,468	NONE NONE	
40LED	Hallway	Hallways	5	T 32 R F 2 (ELE)	F443E F42LL	60	0.30	SW	4368	1,310	C-OCC	
5LED	Hallway	Hallways	20	2T 32 R F 2 (u) (ELE)	FU2LL	60	1.20	SW	4368	5,242	C-OCC	
40LED	Hallway	Hallways	5	T 32 R F 2 (ELE)	F42LL	60	0.30	SW	4368	1,310	C-OCC	
185LED 185LED	106 Office	Classrooms Offices	3	T 40 R F 4 (ELE) T 40 R F 4 (ELE)	F44SE F44SE	172 172	1.03 0.52	SW SW	3360 3024	3,468 1,560	C-OCC	
40LED	Principle Office	Offices	3	T 32 R F 2 (ELE)	F443E F42LL	60	0.32	SW	3024	544	C-OCC	
5LED	Main Office	Offices	12	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.72	SW	3024	2,177	C-OCC	
185LED	Hallway	Hallways	7	T 40 R F 4 (ELE)	F44SE	172	1.20	SW	4368	5,259	C-OCC	
5LED 5LED	Guidance Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW SW	3024 3024	726	0.000	
5LED 5LED	Guidance Office Guidance Office	Offices Offices	6	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60	0.24 0.36	SW	3024	726 1,089	C-OCC C-OCC	
5LED	Guidance Office	Offices	2	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.12	SW	3024	363	C-OCC	
5LED	Guidance Office	Offices	4	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.24	SW	3024	726	C-OCC	
5LED	Guidance Office	Offices	3	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.18	SW	3024	544	C-OCC	
5LED 32LED	Guidance Office Spec Ed 109	Offices Classrooms	8	2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)	FU2LL F42LL	60 60	0.18 0.48	SW SW	3024 3360	544 1,613	C-OCC	
32LED	109 Small Office	Classrooms		1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
32LED	111	Classrooms	10	1T 32 R F 2 (ELE)	F42LL	60	0.60	SW	3360	2,016	C-OCC	
32LED	113	Classrooms	10	1T 32 R F 2 (ELE)	F42LL	60	0.60	SW	3360	2,016	C-OCC	
5LED	Hallway	Hallways	20 8	2T 32 R F 2 (u) (ELE) T 32 R F 2 (ELE)	FU2LL F42LL	60	1.20 0.48	SW	4368	5,242 1,613	C-0CC	
40LED 32LED	115 117	Classrooms Classrooms	14	1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.48	SW SW	3360 3360	2,822	C-OCC	
40LED	Hallway	Hallways	4	T 32 R F 2 (ELE)	F42LL	60	0.24	SW	4368	1,048	C-OCC	
32LED	2nd Floor Room 229	Classrooms		1T 32 R F 2 (ELE)	F42LL	60	1.32	SW	3360	4,435	C-OCC	
32LED 32LED	227 225	Classrooms		1T 32 R F 2 (ELE)	F42LL F42LL	60	0.72 0.72	SW SW	3360 3360	2,419 2.419	C-OCC	
32LED	225	Classrooms Classrooms		1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.72	SW	3360	2,419	C-0CC	
35LED	Restroom	Restroom		T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	2688	484	C-OCC	
185LED	Hallway	Hallways	40	T 40 R F 4 (ELE)	F44SE	172	6.88	SW	4368	30,052	C-OCC	
32LED	Storage	Storage Areas		1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2688	161	C-OCC	
35LED 32LED	Restroom 224	Restroom Classrooms	12	T 32 R F 3 (ELE) 1T 32 R F 2 (ELE)	F43ILL/2 F42LL	90	0.18 0.72	SW SW	2688 3360	484 2,419	C-OCC	
32LED	226	Classrooms	16	1T 32 R F 2 (ELE)	F42LL	60	0.96	SW	3360	3,226	C-OCC	
32LED	228	Classrooms	16	1T 32 R F 2 (ELE)	F42LL	60	0.96	SW	3360	3,226	C-OCC	
185LED	Hallway	Hallways	5	T 40 R F 4 (ELE)	F44SE	172	0.86	SW	4368	3,756	C-OCC	
40LED	212 Office	Classrooms Offices	6	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60	0.36 0.12	SW SW	3360 3024	1,210 363	C-OCC C-OCC	
185LED	Faculty	Offices		T 40 R F 4 (ELE)	F44SE	172	0.12	SW	3024	1.040	C-OCC	
40LED	Hallway	Hallways	5	T 32 R F 2 (ELE)	F42LL	60	0.30	SW	4368	1,310	C-OCC	
35LED	Vocal Music	Classrooms	21	T 32 R F 3 (ELE)	F43ILL/2	90	1.89	SW	3360	6,350	C-OCC	
185LED 185LED	208 206	Classrooms Classrooms	6	T 40 R F 4 (ELE) T 40 R F 4 (ELE)	F44SE F44SE	172 172	1.03 1.03	SW SW	3360 3360	3,468 3,468	C-OCC	
40LED	206	Classrooms	6	T 32 R F 2 (ELE)	F44SE F42LL	60	0.36	SW	3360	1,210	C-0CC	
40LED	202	Classrooms	6	T 32 R F 2 (ELE)	F42LL	60	0.36	SW	3360	1,210	C-OCC	
40LED	203	Classrooms		T 32 R F 2 (ELE)	F42LL	60	0.36	SW	3360	1,210	C-0CC	203B Not Accessible
40LED 40LED	205 207	Classrooms		T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.30 0.24	SW SW	3360 3360	1,008 806	C-OCC C-OCC	
40LED 40LED	207	Classrooms Classrooms		T 32 R F 2 (ELE)	F42LL F42LL	60	0.24	SW	3360	1,210	C-0CC	
40LED	211	Classrooms		T 32 R F 2 (ELE)	F42LL	60	0.36	SW	3360	1,210	C-OCC	
20LED	Hallway	Hallways		S 28 P F 1 (ELE)	F41ILL	31	0.22	SW	4368	948	C-OCC	
40LED	215	Classrooms		T 32 R F 2 (ELE)	F42LL	60	0.60	SW	3360	2,016	C-0CC	213 not accessible
40LED 35LED	217 Hallwav	Classrooms Hallways		T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60 90	0.60	SW SW	3360 4368	2,016 1,572	C-OCC	
32LED	Ground Floor Addition Weight Room 50	Classrooms		1T 32 R F 2 (ELE)	F43ILU2 F42LL	60	2.04	SW	3360	6,854	C-0CC	
40LED	Ground Floor Addition Weight Room 50	Classrooms	6	T 32 R F 2 (ELE)	F42LL	60	0.36	SW	3360	1,210	C-OCC	
32LED	Wrestling Room 52	Classrooms		1T 32 R F 2 (ELE)	F42LL	60	3.12	SW	3360	10,483	C-0CC	
32LED 185LED	Band Room 54 54 Storage	Classrooms Storage Areas	45 2	1T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F44SE	60 172	2.70 0.34	SW SW	3360 2688	9,072 925	C-OCC	
35LED	Girls Locker Room 56	Locker		T 32 R F 3 (ELE)	F445E F43ILL/2	90	1.17	SW	2688	3,145	C-0CC	
198LED	Girls Locker Room 56	Locker	1	2T 17 R F 2 (ELE)	F22LL	31	0.03	SW	2688	83	C-OCC	
5LED	Hallway	Hallways	20	2T 32 R F 2 (u) (ELE)	FU2LL	60	1.20	SW	4368	5,242	C-0CC	
32LED 32LED	Science 51 55	Classrooms Classrooms		1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	1.44 0.72	SW SW	3360 3360	4,838 2,419	C-OCC	
		Classrooms							3360	1,512	C-0CC	
35LED	Hain Room		1 5	11 32 K F 3 (ELE)	F43ILL/Z	90	0.45	OVV				
35LED 20LED	Train Room storage	Storage Areas	5 1	T 32 R F 3 (ELE) S 28 P F 1 (ELE) S 28 P F 1 (ELE)	F43ILL/2 F41ILL	90 31	0.45 0.03	SW SW	2688	83	C-OCC	

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Cost of Electricity:

\$0.089 \$3.01 \$/kW

_					EXISTING CO	NDITIONS						
	Assa Description		No. of	Orandard Finters On the	Finters On to	Watts per	LW/0	Fulat Control	A	A	Retrofit Control	
Field	Area Description Unique description of the location - Room number/Room	Usage Describe Usage Type	Fixtures No. of	Standard Fixture Code Lighting Fixture Code	Fixture Code Code from Table of Standard	Fixture Value from	kW/Space (Watts/Fixt) * (Fixt	Exist Control Pre-inst. control	Annual Hours Estimated	Annual kWh (kW/space) *	Retrofit control device	Notes
Code	name: Floor number (if applicable)	using Operating Hours	fixtures before the retrofit	Lighting Fractice Code	Fixture Wattages	Table of Standard Fixture Wattages	No.)	device		(Annual Hours)	Retiona Control device	Notes
252	Gym	Gymnasium	30	T 54 W F 6 (ELE) (T-5)	F46GHL	351	10.53	SW	2688	28,305	C-OCC	
32LED	Boys Locker Room	Locker	18	1T 32 R F 2 (ELE)	F42LL	60	1.08	SW	2688	2,903	C-OCC	
15LED 32LED	Boys Locker Room Trainer	Locker Offices	4	S 32 C F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.12 0.24	SW SW	2688 3024	323 726	C-OCC C-OCC	
32LED	Office	Offices	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	3024	363	C-OCC	
220	Restroom	Restroom	1	S 17 C F 1(ELE)	F21ILL	20	0.02	SW	2688	54	C-OCC	
5LED	Hallway	Hallways	23	2T 32 R F 2 (u) (ELE)	FU2LL	60	1.38	SW	4368	6,028	C-OCC	
32LED	Boys Restroom	Restroom	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2688	161	C-0CC	
20LED 32LED	Boys Restroom Girls Restroom	Restroom Restroom	1 1	S 28 P F 1 (ELE) 1T 32 R F 2 (ELE)	F41ILL F42LL	31 60	0.03 0.06	SW SW	2688 2688	83 161	C-OCC C-OCC	
20LED	Girls Restroom	Restroom	1	S 28 P F 1 (ELE)	F41ILL	31	0.03	SW	2688	83	C-OCC	
32LED	30	Classrooms	12	1T 32 R F 2 (ELÉ)	F42LL	60	0.72	C-OCC	3360	2,419	NONE	
32LED	32	Classrooms	12	1T 32 R F 2 (ELE)	F42LL	60	0.72	C-OCC	3360	2,419	NONE	
32LED	31	Classrooms	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.72	SW	3360	2,419	0.000	
32LED 32LED	33 35	Classrooms Classrooms	12 12	1T 32 R F 2 (ELE)	F42LL F42LL	60	0.72 0.72	SW SW	3360 3360	2,419 2,419	C-OCC C-OCC	
32LED	37	Classrooms	12	1T 32 R F 2 (ELE)	F42LL	60	0.72	C-OCC	3360	2,419	NONE	
32LED	39	Classrooms	12	1T 32 R F 2 (ELE)	F42LL	60	0.72	C-OCC	3360	2,419	NONE	
32LED	41	Classrooms	12	1T 32 R F 2 (ELE)	F42LL	60	0.72	C-OCC	3360	2,419	NONE	
55LED 35LED	Lobby 1st Floor Faculty	Hallways Offices	6	2T 17 R F 3 (ELE) T 32 R F 3 (ELE)	F23ILL F43ILL/2	47 90	0.28 0.72	SW SW	4368 3024	1,232 2,177	C-OCC C-OCC	
32LED	Small Office	Offices	1	1T 32 R F 2 (ELE)	F43ILUZ F42LL	60	0.06	SW	3024	181	C-OCC	
32LED	Storage	Storage Areas	1	1T 32 R F 2 (ELE)	F42LL	60	0.06	SW	2688	161	C-OCC	
35LED	150	Classrooms	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	3360	4,838	C-OCC	
35LED	152	Classrooms	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.44	SW	3360	4,838	C-OCC	
35LED 35LED	154 156	Classrooms Classrooms	16 16	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.44 1.44	SW SW	3360 3360	4,838 4.838	C-OCC C-OCC	
5LED	Hallway	Hallways	20	2T 32 R F 2 (u) (ELE)	F43ILD2 FU2LL	60	1.44	SW	4368	5,242	C-OCC	
35LED	151	Classrooms	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	3360	2,419	C-OCC	
35LED	153	Classrooms	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	3360	2,419	C-OCC	
35LED	155	Classrooms	8	T 32 R F 3 (ELE)	F43ILL/2	90	0.72	SW	3360	2,419	C-OCC	
35LED 32LED	Conference Room 157 Library	Conference Library	35	T 32 R F 3 (ELE) 1T 32 R F 2 (ELE)	F43ILL/2 F42LL	90	0.81 2.10	SW SW	2016 2688	1,633 5,645	C-OCC C-OCC	
20LED	Office	Offices	4	S 28 P F 1 (ELE)	F41ILL	31	0.12	SW	3024	375	C-OCC	
35LED	Office	Offices	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.18	SW	3024	544	C-OCC	
5LED	Hallway	Hallways	10	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.60	SW	4368	2,621	C-OCC	
5LED	Storage	Storage Areas	1	2T 32 R F 2 (u) (ELE)	FU2LL	60	0.06	SW	2688	161	C-0CC	
17 55LED	Restroom Restroom	Restroom Restroom	1	2' 20 W F 1 (MAG) 2T 17 R F 3 (ELE)	F21SS F23ILL	28 47	0.03 0.05	SW SW	2688 2688	75 126	C-OCC C-OCC	
20LED	Restroom	Restroom	1 1	S 28 P F 1 (ELE)	F41ILL	31	0.03	SW	2688	83	C-OCC	
32LED	Restroom	Restroom	2	1T 32 R F 2 (ELE)	F42LL	60	0.12	SW	2688	323	C-OCC	
32LED	132	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
32LED 32LED	130	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360 3360	1,613	0.000	
32LED 32LED	131 133	Classrooms Classrooms	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.48 0.48	SW SW	3360	1,613 1,613	C-OCC C-OCC	
32LED	135	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
32LED	137	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
32LED	139	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
32LED	141	Classrooms	8	1T 32 R F 2 (ELE)	F42LL	60	0.48	SW	3360	1,613	C-OCC	
5LED 5LED	Hallway Hallwav	Hallways Hallways	16 5	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60	0.96 0.30	SW SW	4368 4368	4,193 1,310	C-OCC C-OCC	
142LED	Exterior Lights	Outdoor Lighting	17	MH 100	MH100/1	128	2.18	Breaker	4032	8,774	NONE	
273	Exterior Lights	Outdoor Lighting	2	QL85/1	QL85/1	85	0.17	Breaker	4032	685	NONE	
231LED	Exterior Lights	Outdoor Lighting	2	WP400MH1	MH400/1	458	0.92	Breaker	4032	3,693	NONE	
263	Stadium Pole Lights	Outdoor Lighting	10	MH1000 Fixt	MH1000/1	1080	10.80	Breaker	4032	43,546	NONE	
263	Stadium Pole Lights	Outdoor Lighting	12	MH1000 Fixt	MH1000/1	1080	12.96	Breaker	4032	52,255	NONE	
					<u> </u>	+						
	Total		1,582				149.34			521,055		

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			EXISTING CONI	DITIONS						T	RETROFIT O	CONDITIONS			1				COST & SAVING	SS ANALYSIS		Simple Payhack	
	Area Description	No. of Fixtures Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixt		Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Ho	urs Annual kWh	Annual kWh Saved	Annual kW Saved	Annual \$ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	With Out Incentive	Simple Payback
Field Code Ur	nique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures "Lighting Fixture Code" Example before the retrofit R F(U) = 2'x2' Troff 40 w Recess	2T 40 Code from Table of Standard i. Floor 2 Fixture Wattages	Value from Table of	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the	(kW/space) * (Annual Hours)	No. of fixtures a the retrofit	2T 40 R F(U) = 2'x2' Troff 40 w	Code from Table of Standard Fixture	Value from Table of	(Watts/Fixt) * (Number of	Retrofit contro device	annual hours				kWh Saved) * \$/kWh)		Prescriptive Lighting	Length of time for renovations	Length of time for renovations cost to
		lamps U shape		Standard Fixture			usage group			Recess. Floor 2 lamps U shape	Wattages	Standard Fixture	Fixtures)		for the usage group	e Hours)	Annual kWh)	Annual kW)		lighting system	Measures	cost to be recovered	be recovered
202 202 55LED	Ground Floor Main Entrance Main Entrance Vestibule	1 2T 17 R F 4 (ELE) 1 2T 17 R F 4 (ELE)	F24ILL F24ILL	61 61	0.1 0.1	SW SW	4368 4368	266 266		2T 17 R F 4 (ELE) 2T 17 R F 4 (ELE)	F24ILL F24ILL	61 61	0.1 0.1	SW SW	4,368 4,368	266 266	3 -	0.0	-	\$ - \$ -	\$0 \$0		#DIV/0! #DIV/0!
55LED 40LED 5LED	Main Lobby  Nurse Office	9 2T 17 R F 3 (ELE) 10 T 32 R F 2 (ELE) 3 2T 32 R F 2 (u) (ELE)	F23ILL F42LL FU2LL	47 60	0.4	SW	4368 3024 3024	1,848 1,814 544	10	2T 25 R LED T 38 R LED 2T 25 R LED	2RTLED RTLED38 2RTLED	25 38	0.2 0.4 0.1	SW SW SW	4,368 3,024 3,024	983 1,149	8 865 9 665 7 318		84.12 67.16 32.05	\$ 1,822.50 \$ 2,362.50 \$ 607.50		21.7 35.2 19.0	16.3 31.5 17.5
5LED 39	Nurse Office Copier Room  Nurse Office Bath Room  Nurse Office Storage	1 2T 32 R F 2 (u) (ELE) 1 2' 17 W F 2 (ELE)	FU2LL FU2LL F22ILL	60	0.2 0.1 0.0	SW	2688 2688	161		2T 25 R LED 2' 17 W F 2 (ELE)	2RTLED F22ILL	25 33	0.0	SW	2,688 2,688	67 89			9.64 5 -			21.0	19.5 #DIV/0!
40LED 40LED	Exam Room 1 Exam Room 2	1 T 32 R F 2 (ELE) 1 T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.1 0.1	SW SW	3024 3024	181 181	1 1	T 38 R LED T 38 R LED	RTLED38 RTLED38	38 38	0.0 0.0	SW SW	3,024 3,024	115 115	67 67		6.72	\$ 236.25 \$ 236.25	\$25 \$25	35.2 35.2	31.5 31.5
40LED 5LED 15LED	Exam Room 3  Nurse Office Bath Room  Nurse Office Storage	1 T 32 R F 2 (ELE) 2 2T 32 R F 2 (u) (ELE) 2 S 32 C F 2 (ELE)	F42LL FU2LL F42LL	60 60	0.1 0.1	SW	3024 2688 2688	181 323 321	1 1 2	T 38 R LED 2T 25 R LED STLED4	RTLED38 2RTLED STLED4	25 40	0.0 0.1	SW SW	3,024 2,688 2,688	115 134 215		0.1	6.72 19.27 11.01	\$ 236.25 \$ 405.00 \$ 713.40	\$30	35.2 21.0 64.8	31.5 19.5 64.8
32LED 185LED	Stair to Nurse Room Storage next to the small stair to Nurse Room	1 1T 32 R F 2 (ELE) 2 T 40 R F 4 (ELE)	F42LL F44SE	60 172	0.1	SW SW	2688 2688	161	1 1 2	STLED4 T 50 R LED	STLED4 RTLED50	40	0.0	SW	2,688 2,688	108	54	0.0	5.51	\$ 356.70 \$ 472.50	\$15 \$50	64.8 7.0	62.0 6.3
32LED 40LED	Restroom Office Space Next to Nurse Office	1 1T 32 R F 2 (ELE) 4 T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.1	SW SW	2688 3024	161 726	1 1 4	STLED4 T 38 R LED	STLED4 RTLED38	40 38	0.0	SW	2,688 3,024	108 460	54 0 266	0.0	5.51 26.86	\$ 356.70 \$ 945.00	\$15 \$100	64.8 35.2	62.0 31.5
40LED 33 40LED	Small Office 1 Small Office 1 Floor Lamp Small Office 2	2 T 32 R F 2 (ELE) 3 13 W CF 1 2 T 32 R F 2 (ELE)	F42LL CFQ13/1-L F42LL	60 15 60	0.1 0.0 0.1	SW SW	3024 3024 3024	363 136 363	3 3	T 38 R LED 13 W CF 1 T 38 R LED	RTLED38 CFQ13/1-L RTLED38	15 38	0.1 0.0 0.1	SW SW SW	3,024 3,024 3,024			0.0	13.43 - 13.43	\$ -	\$0	35.2 35.2	31.5 #DIV/0! 31.5
33 40LED	Small Office 2 Small Office 3	1 13 W CF 1 2 T 32 R F 2 (ELE)	CFQ13/1-L F42LL	15 60	0.0	SW SW	3024 3024	45 363	5 1 3 2	13 W CF 1 T 38 R LED	CFQ13/1-L RTLED38	15 38	0.0 0.1	SW SW	3,024 3,024	45 230	133	0.0	13.43	\$ -	\$0	35.2	#DIV/0! 31.5
33 40LED	Small Office 3 Pathways Office	3 13 W CF 1 3 T 32 R F 2 (ELE)	CFQ13/1-L F42LL	15 60	0.0	SW SW	3024 3024	136 544	3	13 W CF 1 T 38 R LED	CFQ13/1-L RTLED38	15 38	0.0	SW	3,024 3,024	136 345	5 200	0.0	20.15	\$ - \$ 708.75		35.2	#DIV/0! 31.5
35LED 40LED 35LED	Pathways Office Pathways Small Office Pathways Small Office	1 T 32 R F 3 (ELE) 2 T 32 R F 2 (ELE) 2 T 32 R F 3 (ELE)	F43ILL/2 F42LL F43ILL/2	90 60	0.1 0.1	SW SW	3024 3024 3024	363 544	2 1 3 2	T 59 R LED T 38 R LED T 59 R LED	RTLED38 RTLED38 RTLED38	38 38	0.0 0.1	SW SW	3,024 3,024 3,024	115 230 230	5 157 0 133 0 314	0.0	15.87 13.43	\$ 236.25 \$ 472.50 \$ 472.50	\$50	14.9 35.2 14.9	13.3 31.5 13.3
40LED 185LED	Pathways Conference Room Hallway	6 T 32 R F 2 (ELE) 8 T 40 R F 4 (ELE)	F42LL F44SE	60 172	0.4	SW SW	2016 4368	726 6,010	6 6	T 38 R LED T 50 R LED	RTLED38 RTLED50	38 50	0.2	SW SW	2,016 4,368	460 1,747	266	0.1	28.45 414.68	\$ 1,417.50 \$ 1,890.00	\$150 \$200	49.8 4.6	44.5 4.1
40LED 40LED	Instrumental Music Instrumental Music Office	4 T 32 R F 2 (ELE) 2 T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.2 0.1	SW SW	3360 3024	806 363	3 2	T 38 R LED T 38 R LED	RTLED38 RTLED38	38 38	0.2 0.1	SW SW	3,360 3,024	511 230	296	0.1	\$ 29.49 \$ 13.43	\$ 945.00 \$ 472.50	\$100 \$50	32.0 35.2	28.6 31.5
40LED 40LED 40LED	Instrumental Music Storage R24 Restroom	2 T 32 R F 2 (ELE) 8 T 32 R F 2 (ELE) 2 T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60	0.1 0.5 0.1	SW SW SW	2688 3360 2688	323 1,613 323	2 3 8 3 2	T 38 R LED T 38 R LED T 38 R LED	RTLED38 RTLED38 RTLED38	38 38 38	0.1 0.3 0.1	SW SW SW	2,688 3,360 2,688	204 1,021 204	591	0.2	\$ 12.12 \$ 58.99 \$ 12.12	\$ 1,890.00	\$200	39.0 32.0 39.0	34.9 28.6 34.9
33 15LED	Closet Cafeteria	1 13 W CF 1 80 S 32 C F 2 (ELE) 13 T 32 R F 3 (ELE)	CFQ13/1-L F42LL	15 60	0.0 4.8	SW SW	2688 2688	12,902	1 80	13 W CF 1 STLED4	CFQ13/1-L STLED4	15 40	0.0 3.2	SW SW	2,688 2,688	40 8,602	2 4,301	0.0 1.6	\$ - \$ 440.56	\$ - \$ 28,536.00	\$0 \$0	64.8	#DIV/0! 64.8
35LED 35LED	Kitchen Kitchen Office	4 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90 90 60	1.2 0.4	SW SW	2688 3024 2688	3,145 1,089		T 59 R LED T 59 R LED	RTLED38 RTLED38	38 38 25	0.5 0.2	SW SW	2,688 3,024 2,688	1,328 460 67	629	0.2	186.14 63.49	\$ 945.00	\$100	16.5 14.9 21.0	14.8 13.3 19.5
5LED 5LED 121	Restroom Closet Back Closet	1 2T 32 R F 2 (u) (ELE) 1 2T 32 R F 2 (u) (ELE) 1 W 34 P F 4	FU2LL FU2LL F44EE	60 60 144	0.1 0.1 0.1	SW SW SW	2688 2688 2688	161 161 381	1 1	2T 25 R LED 2T 25 R LED W 28 P F 4	2RTLED 2RTLED F44SSILL	25 96	0.0 0.0 0.1	SW SW	2,688 2,688 2,688	67 258	7 94 7 94 3 129		9.64 9.64 13.22	\$ 202.50 \$ 202.50 \$ 141.75	\$15	21.0 21.0 10.7	19.5 19.5 10.7
3 35LED	Back Closet Dishwash Room	1 W 34 W F 1 (MAG) 3 T 32 R F 3 (ELE)	F41EE F43ILL/2	43 90	0.0	SW SW	2688 2688	116 726	i 1	W 28 W F 1 T 59 R LED	F41SSILL RTLED38	26 38	0.0 0.1	SW SW	2,688 2,688	70 306	46 3 419	0.0	4.68 42.95	\$ 189.00	\$0	40.4 16.5	40.4 14.8
32LED 5LED 20LED	Dishwash Room Dishwash Room Stair	1 1T 32 R F 2 (ELE) 1 2T 32 R F 2 (u) (ELE) 2 S 28 P F 1 (ELE)	F42LL FU2LL F41ILL	60 60	0.1 0.1 0.1	SW SW	2688 2688 4368	16°	1 1	STLED4 2T 25 R LED 4 ft LED Tube	STLED4 2RTLED 200732x1	25 15	0.0 0.0 0.0	SW SW SW	2,688 2,688 4,368	108 67			5.51 9.64 13.60		\$15	64.8 21.0 21.4	62.0 19.5 19.2
35LED 35LED	Stair Hallway	1 T32 R F 3 (ELE) 1 T32 R F 3 (ELE) 1 T32 R F 3 (ELE) 3 T34 R F 3 (MAG)	F43ILL/2 F43ILL/2	90	0.1	SW SW	4368 4368	393 393	3 1	T 59 R LED T 59 R LED T 38 R LED	RTLED38 RTLED38	38 38	0.0	SW SW	4,368 4,368	166 166	3 227	0.1	22.09 22.09	\$ 236.25	\$25	10.7 10.7	9.6 9.6
61LED 30	Hallway Auditorium	14 1 B 96 C F 2 (MAG)	F43EE F82EHS FU2LI	115 227	0.3 3.2	SW	4368 2688	1,507 8,542	3 14	T 28 R F 4	RTLED38 F44SSILL	38 96	0.1 1.3	SW	4,368 2,688	498 3,613		1.8	98.15 505.00 77.10	\$ 708.75 \$ 3,780.00	\$75 \$0	7.2 7.5	6.5 7.5
5LED 32LED 32LED	Auditorium Hallway Boiler Room	8 2T 32 R F 2 (u) (ELE) 8 1T 32 R F 2 (ELE) 11 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.5 0.5	SW SW	2688 4368 8736	1,290 2,097 5,766	7 8 5 11	2T 25 R LED STLED4 STLED4	2RTLED STLED4 STLED4	40 40	0.2 0.3 0.4	SW SW SW	2,688 4,368 8,736	538 1,398 3,844	699	0.2	67.98 179.00			21.0 42.0 21.9	19.5 40.2 21.0
46LED 32LED	Boiler Room Office	1 W 32 P F 2 (ELE) 6 1T 32 R F 2 (ELE)	F42ILL F42LL	59 60	0.1 0.4	SW SW	8736 3024	515 1,089		4 ft LED Tube STLED4	200732x2 STLED4	30 40	0.0	SW SW	8,736 3,024	262 726	2 253 3 363	0.0	23.60 36.63	\$ 163.35	\$15	6.9 58.4	6.3 56.0
32LED 35LED 32LED	Office Athelic Director Room 4	6 1T 32 R F 2 (ELE) 4 T 32 R F 3 (ELE) 13 1T 32 R F 2 (ELE)	F42LL F43ILL/2 F42LL	60 90	0.4	SW	3024 3024 3024	1,089 1,089 2,359	4	STLED4 T 59 R LED STLED4	STLED4 RTLED38 STLED4	40 38	0.2 0.2	SW SW SW	3,024 3,024 3,024	726 460	6 363 0 629 2 786	0.2	36.63 63.49 79.37		\$100	58.4 14.9 58.4	56.0 13.3
185LED 32LED	Room 6 Office	12 T 40 R F 4 (ELE) 1 1T 32 R F 2 (ELE)	F44SE F42LL	172 60	2.1 0.1	C-OCC SW	3024 3024	6,242		T 50 R LED STLED4	RTLED50 STLED4	50	0.6 0.0	C-OCC SW	3,024 3,024	1,814		1.5	446.89 6.11	\$ 2,835.00 \$ 356.70	\$300 \$15	6.3 58.4	5.7 56.0
35LED 35LED	Apt Classroom 10 Apt Classroom 10	6 T 32 R F 3 (ELE) 6 T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.5 0.5	SW SW	3360 3360	1,814 1,814		T 59 R LED T 59 R LED	RTLED38 RTLED38	38 38	0.2	SW	3,360 3,360	766 766	1,048 1,048	0.3	104.57		\$150	13.6 13.6	12.1 12.1
32LED 32LED 32LED	Closet Girls Restroom 1st Floor Room129	1 1T 32 R F 2 (ELE) 2 1T 32 R F 2 (ELE) 12 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60	0.1 0.1	SW SW SW	2688 2688 3360	323 2,419	1 3 2 4 12	STLED4 STLED4 STLED4	STLED4 STLED4 STLED4	40 40 40	0.0 0.1 0.5	SW SW SW	2,688 2,688 3,360	108 215 1,613	108		5.51 11.01 8 80.44	\$ 713.40	\$30	64.8 64.8 53.2	62.0 62.0 51.0
32LED 32LED	Room 127 Room 127	8 1T 32 R F 2 (ELE) 2 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.5 0.1	SW SW	3360 3360	1,613	8 8	STLED4 STLED4	STLED4 STLED4	40 40	0.3 0.1	SW	3,360 3,360	1,075 269	5 538	0.2	53.63 13.41	\$ 2,853.60 \$ 713.40	\$120 \$30	53.2 53.2	51.0 51.0
35LED 32LED	Office 125	3 T 32 R F 3 (ELE) 14 1T 32 R F 2 (ELE) 14 1T 32 R F 2 (FLE)	F43ILL/2 F42LL	90 60	0.3	SW	3024 3360	2,822	14	T 59 R LED STLED4	STLED4 STLED4	38 40	0.1 0.6	SW	3,024 3,360	345 1,882	941	0.3	93.84	\$ 4,993.80	\$210	14.9 53.2	13.3 51.0
32LED 185LED 35LED	123 Restroom Book Storage	14 1T 32 R F 2 (ELE) 2 T 40 R F 4 (ELE) 4 T 32 R F 3 (ELE)	F42LL F44SE F43ILL/2	172 90	0.8 0.3 0.4	SW	3360 2688 2688	2,822 925 968	5 2	STLED4 T 50 R LED T 59 R LED	RTLED50 RTLED38	50	0.6 0.1 0.2	SW SW SW	3,360 2,688 2,688	1,882 269 409	656	0.2	93.84 67.19 57.27	\$ 472.50	\$50	53.2 7.0 16.5	51.0 6.3 14.8
20LED 32LED	Restroom 124A	2 S 28 P F 1 (ELE) 16 1T 32 R F 2 (ELE)	F41ILL F42LL	31 60	0.1 1.0	SW SW	2688 3360	3,226	2 16	4 ft LED Tube STLED4	200732x1 STLED4	15 40	0.0 0.6	SW SW	2,688 3,360	81 2,150	1,075	0.0	8.81	\$ 290.40 \$ 5,707.20	\$30 \$240	33.0 53.2	29.6 51.0
32LED 185LED 32LED	124B 126 128	6 1T 32 R F 2 (ELE) 6 T 40 R F 4 (ELE) 8 1T 32 R F 2 (ELE)	F42LL F44SE F42LL	172 60	0.4 1.0	SW SW	3360 3360 3360	1,210 3,468 1,613	6	STLED4 T 50 R LED STLED4	STLED4  RTLED50  STLED4	50	0.2 0.3	SW SW SW	3,360 3,360 3,360	1,008 1,075	2,460	0.7	\$ 40.22 \$ 245.34 \$ 53.63	\$ 1,417.50	\$150	53.2 5.8 53.2	51.0 5.2 51.0
40LED 33	128 Restroom	4 T 32 R F 2 (ELE) 1 13 W CF 1	F42LL CFQ13/1-L	60 15	0.2	SW SW	3360 2688	806	3 4	T 38 R LED 13 W CF 1	RTLED38 CFQ13/1-L	38 15	0.2	SW SW	3,360 2,688	511	5 538 1 296 0 -	0.1	29.49	\$ 945.00 \$ -	\$100 \$0	53.2 32.0	28.6 #DIV/0!
20LED 185LED 185LED	storage 112	1 S 28 P F 1 (ELE) 6 T 40 R F 4 (ELE) 6 T 40 R F 4 (ELE)	F41ILL F44SE F44SE	31 172 172	1.0	C-OCC	2688 3360	3,468 3,468		4 ft LED Tube T 50 R LED T 50 R LED	200732x1 RTLED50 RTLED50	15 50	0.0	C-OCC C-OCC	2,688 3,360	40 1,008 1,008		0.0	4.41 3 245.34 245.34	\$ 145.20 \$ 1,417.50 \$ 1,417.50	\$15 \$150 \$150	33.0 5.8	29.6 5.2
185LED 40LED	108 Hallway	6 T 40 R F 4 (ELE) 5 T 32 R F 2 (ELE)	F44SE F44SE F42LL	172 172 60	1.0	C-OCC SW	3360 3360 4368	3,468 3,468 1,310	6	T 50 R LED T 50 R LED T 38 R LED	RTLED50 RTLED50 RTLED38	50	0.3 0.2	C-OCC SW	3,360 3,360 4,368	1,008	2,460	0.7	245.34 245.34 46.74	\$ 1,417.50	\$150	5.8 5.8 25.3	5.2 5.2 22.6
5LED 40LED	Hallway Hallway	20 2T 32 R F 2 (u) (ELE) 5 T 32 R F 2 (ELE) 6 T 40 R F 4 (ELE)	FU2LL F42LL F44SE	60 60	1.2	SW SW	4368 4368	5,242 1,310 3,468		2T 25 R LED T 38 R LED T 50 R LED	2RTLED RTLED38 RTLED50	25 38	0.5 0.2	SW SW	4,368 4,368	2,184 830	3,058 ) 480	0.7	297.41 46.74	\$ 4,050.00 \$ 1,181.25	\$300	13.6 25.3 5.8	12.6 22.6
185LED 185LED 40LED	106 Office Principle Office	6 T 40 R F 4 (ELE) 3 T 40 R F 4 (ELE) 3 T 32 R F 2 (ELE)	F44SE F44SE F42LL	172 172 60	1.0 0.5 0.2	SW SW SW	3360 3024 3024	3,468 1,560 544	) 3	T 50 R LED T 50 R LED T 38 R LED	RTLED50 RTLED50 RTLED38	50 50 38	0.3 0.2 0.1	SW SW SW	3,360 3,024 3,024	1,008 454 345	1,107	0.4	245.34 111.72 20.15	\$ 708.75 \$ 708.75	\$150 \$75 \$75	5.8 6.3 35.2	5.2 5.7 31.5
5LED 185LED	Main Office Hallway	12 2T 32 R F 2 (u) (ELE) 7 T 40 R F 4 (ELE)	F42LL FU2LL F44SE	60 172	0.2 0.7 1.2	SW SW	3024 3024 4368	2,177 5,259		2T 25 R LED T 50 R LED	2RTLED RTLED50	25 50	0.1 0.3 0.4	SW SW	3,024 3,024 4,368	907 1,529	1,270	0.4	20.15 128.21 362.84	\$ 708.75 \$ 2,430.00 \$ 1,653.75	\$180 \$175	19.0 4.6	31.5 17.5 4.1
5LED 5LED	Guidance Office Guidance Office	4 2T 32 R F 2 (u) (ELE) 4 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60 60	0.2 0.2	SW SW	3024 3024	726 726	6 4 6 4	2T 25 R LED 2T 25 R LED	2RTLED 2RTLED	25 25	0.1 0.1	SW SW	3,024 3,024	302	2 423 2 423	0.1	\$ 42.74 \$ 42.74	\$ 810.00 \$ 810.00	\$60 \$60	19.0 19.0	17.5 17.5
5LED 5LED 5LED	Guidance Office Guidance Office Guidance Office	6 2T 32 R F 2 (u) (ELE) 2 2T 32 R F 2 (u) (ELE) 4 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL FU2LL	60 60 60	0.4 0.1 0.2	SW SW SW	3024 3024 3024	1,089 363 726		2T 25 R LED 2T 25 R LED 2T 25 R LED	2RTLED 2RTLED 2RTLED	25 25 25	0.2 0.1 0.1	SW SW SW	3,024 3,024 3,024	454 151 302			64.10 21.37 42.74	\$ 1,215.00 \$ 405.00 \$ 810.00	\$30	19.0 19.0 19.0	17.5 17.5 17.5
5LED 5LED	Guidance Office Guidance Office	3 2T 32 R F 2 (u) (ELE) 3 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60 60	0.2 0.2 0.2	SW SW	3024 3024	544 544	3	2T 25 R LED 2T 25 R LED	2RTLED 2RTLED	25 25	0.1 0.1	SW	3,024 3,024	227	7 318	0.1	32.05 32.05	\$ 607.50 \$ 607.50	\$45 \$45	19.0 19.0	17.5 17.5 17.5
32LED 32LED	Spec Ed 109 109 Small Office	8 1T 32 R F 2 (ELE) 8 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.5 0.5	SW	3360 3360	1,613 1,613		STLED4 STLED4	STLED4 STLED4	40 40	0.3 0.3	SW	3,360 3,360	1,075 1,075	538	0.2	53.63 53.63	\$ 2,853.60 \$ 2,853.60	\$120 \$120	53.2 53.2	51.0 51.0
32LED 32LED 5LED	111 113 Hallway	10 1T 32 R F 2 (ELE) 10 1T 32 R F 2 (ELE) 20 2T 32 R F 2 (U) (ELE)	F42LL F42LL FU2LL	60 60 60	0.6 0.6 1.2	SW SW SW	3360 3360 4368	2,016 2,016 5,242	10 5 10 2 20	STLED4 STLED4 2T 25 R LED	STLED4 STLED4 2RTLED	40 40 25	0.4 0.4 0.5	SW SW SW	3,360 3,360 4,368	1,344 1,344 2,184	672		67.03 67.03 297.41	\$ 3,567.00 \$ 3,567.00 \$ 4,050.00	\$150	53.2 53.2 13.6	51.0 51.0 12.6
40LED 32LED	115 117	8 T 32 R F 2 (ELE) 14 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.5 0.8	SW SW	3360 3360	1,613 2,823	8 8	T 38 R LED STLED4	RTLED38 STLED4	38 40	0.3 0.6	SW SW	3,360 3,360	1,021 1,882	591 2 941	0.2	58.99 93.84	\$ 1,890.00 \$ 4,993.80	\$200 \$210	32.0 53.2	28.6 51.0
40LED 32LED	Hallway 2nd Floor Room 229	4 T 32 R F 2 (ELE) 22 1T 32 R F 2 (ELE) 43 4T 32 R F 2 (FLE)	F42LL F42LL	60 60	0.2 1.3	SW SW	4368 3360	1,048 4,435	3 4	T 38 R LED STLED4	RTLED38 STLED4	38 40	0.2 0.9	SW SW	4,368 3,360	2,957	384 7 1,478	0.1	37.39 147.47	\$ 945.00 \$ 7,847.40	\$100 \$330	25.3 53.2	22.6 51.0
32LED 32LED 32LED	227 225 223	12 1T 32 R F 2 (ELE) 12 1T 32 R F 2 (ELE) 12 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.7 0.7 0.7	SW SW SW	3360 3360 3360	2,419 2,419 2,419	12 12 12 12	STLED4 STLED4 STLED4	STLED4 STLED4 STLED4	40 40 40	0.5 0.5 0.5	SW SW SW	3,360 3,360 3,360	1,613 1,613 1,613	806	0.2	80.44 80.44 8 80.44	\$ 4,280.40	\$180	53.2 53.2 53.2	51.0 51.0 51.0
35LED 185LED	Restroom Hallway	2 T 32 R F 3 (ELE) 40 T 40 R F 4 (ELE)	F43ILL/2 F44SE	90 172	0.2 6.9	SW	2688 4368	30,052	4 2 40	T 59 R LED T 50 R LED	STLED4 RTLED38 RTLED50	38 50	0.1 2.0	SW SW	2,688 4,368	204 8,736	280	4.9	28.64	\$ 472.50 \$ 9,450.00	\$1,000	53.2 16.5 4.6	14.8 4.1
32LED 35LED	Storage Restroom	1 1T 32 R F 2 (ELE) 2 T 32 R F 3 (ELE) 12 1T 32 R F 2 (FLE)	F42LL F43ILL/2	60 90 60	0.1 0.2 0.7	SW SW	2688 2688	161	1 2	STLED4 T 59 R LED	STLED4 RTLED38	40 38 40	0.0 0.1	SW SW	2,688 2,688	108 204 1,613	54 4 280	0.0	5.51 28.64	\$ 356.70 \$ 472.50	\$15 \$50	64.8 16.5	62.0 14.8
32LED 32LED 32LED	224 226 228	16 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	1.0 1.0	SW SW SW	3360 3360 3360	2,419 3,226 3,226	16	STLED4 STLED4 STLED4	STLED4 STLED4 STLED4	40 40	0.5 0.6 0.6	SW SW SW	3,360 3,360 3,360	1,613 2,150 2,150	1,075		80.44 107.25 107.25	\$ 5,707.20	\$240 \$240	53.2 53.2 53.2	51.0 51.0 51.0
185LED 40LED	Hallway 212 Office	16 1T 32 R F 2 (ELE) 5 T 40 R F 4 (ELE) 6 T 32 R F 2 (ELE)	F44SE F42LL	172 60	0.9 0.4	SW	4368 3360	3,756 1,210	5 5	STLED4 T 50 R LED T 38 R LED	STLED4 RTLED50 RTLED38	50 38	0.3 0.2	SW	4,368 3,360	1,092 766	2 2,664	0.6	107.25 259.17 44.24 13.43	\$ 5,707.20 \$ 1,181.25 \$ 1,417.50	\$150	4.6 32.0	4.1 28.6
40LED 185LED 40LED	Faculty	2 T 32 R F 2 (ELE) 2 T 40 R F 4 (ELE) 5 T 32 R F 2 (ELE)	F42LL F44SE F42LL	60 172 60	0.1 0.3	SW SW SW	3024 3024 4368	363 1,040 1,310	3 2	T 38 R LED T 50 R LED T 38 R LED	RTLED38 RTLED50 RTLED38	38 50 38	0.1 0.1	SW SW SW	3,024 3,024 4,368	230 302 830	133 2 738 0 480	0.2	13.43 74.48 46.74	\$ 472.50 \$ 472.50	\$50	35.2 6.3 25.3	31.5 5.7 22.6
35LED	Hallway Vocal Music	5   1 32 R F 2 (ELE) 21   T 32 R F 3 (ELE)	F42LL F43ILL/2	90	0.3 1.9	SW	4368 3360	6,350		T 59 R LED	RTLED38		0.2	SW	3,360					\$ 1,181.25 \$ 4,961.25	\$525	25.3 13.6	12.1

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													RETROFIT C											Simple Payback	К
						Watts per								Watts per		Retrofit	l		Annual kWh			Patrofit Cost	NJ Smart Start	With Out	4/
	Area Description	No. of Fixtures No. of fixtures	Standard Fixtu	are 0000	Fixture Code T 40 Code from Table of Standar	Fixture d Value from	kW/Space (Watts/Fixt) * (Fix	Exist Contro	I Annual Hours Estimated daily	Annual kWh (kW/space) *	Number of Fixtures	S Standard Fixture Code	Fixture Code	Fixture	kW/Space	Control	Annual Hours		Saved (Original Annual	Annual kW Saved	Annual \$ Saved (Wh Saved) *	Rotront Goot	Lighting Incentive	Incentive	Sim
ıqı	name: Floor number (if applicable)	before the retrofit	"Lighting Fixture Code" Exa R F(U) = 2'x2' Troff 40	w Recess. Floor 2		Table of	No.)	Pre-inst.	hours for the	(Annual Hours)	No. of fixtures after the retrofit	r "Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w	Code from Table of Standard Fixture	Value from Table of	(Watts/Fixt) * (Number of	Retrofit contro device	Estimated annual hours	(kW/space) * (Annual	kWh) - (Retrofit		(kWh)	Cost for renovations to	Prescriptive Lighting	Length of time for renovations	reno
	,		lamps U shape			Standard	,		usage group	(,		Recess. Floor 2 lamps U shape	Wattages	Standard	Fixtures)		for the usage	Hours)	Annual kWh)	Annual kW)	,	lighting system	Measures	cost to be	b
						Fixture								Fixture			group	1						recovered	/
	208	6	T 40 R F 4 (ELE)		F44SE	172	1.0	SW	3360	3,46	6	T 50 R LED	RTLED50	50	0.3	SW	3,360	1,008	2,460	0.7	245.34	\$ 1,417.50	\$150	5.8	T
	206	6	T 40 R F 4 (ELE)		F44SE	172	1.0	SW	3360	3,46	8 6	T 50 R LED	RTLED50	50	0.3	SW	3,360	1,008	2,460	0.7	245.34	\$ 1,417.50	\$150	5.8	+
	204	6	T 32 R F 2 (ELE) T 32 R F 2 (ELE)		F42LL F42LL	60	0.4	SW	3360 3360	1,210	0 6	T 38 R LED	RTLED38	38	0.2	SW	3,360 3,360	766	444 444		44.24		\$150	32.0 32.0	+
	202	6	T 32 R F 2 (ELE)		F42LL	60	0.4	SW	3360	1,21	0 6		RTLED38	38	0.2	SW	3,360	766	444		44.24	\$ 1,417.50	\$150		+
	205	5	T 32 R F 2 (ELE) T 32 R F 2 (ELE)		F42LL F42LL	60	0.3	SW	3360	1.00	8 5	T 38 R LED T 38 R LED	RTLED38	38	0.2	SW	3,360	638	370	0.1	36.87	\$ 1.181.25	\$125	32.0 32.0	_
	207	4	T 32 R F 2 (ELE) T 32 R F 2 (ELE)		F42LL	60	0.2	SW	3360	80	6 4	T 38 R LED	RTLED38	38	0.2	SW	3,360	511	296	0.1	29.49	\$ 945.00	\$100	32.0 32.0	
	209	6	T 32 R F 2 (ELE)		F42LL	60	0.4	SW	3360	1,210	0 6	T 38 R LED	RTLED38	38	0.2	SW	3,360	766	444	0.1	44.24	\$ 1,417.50	\$150	32.0	
	211	6	T 32 R F 2 (ELE) S 28 P F 1 (ELE)		F42LL	60	0.4	SW	3360	1,210	0 6	T 38 R LED	RTLED38	38	0.2	SW	3,360	766	444	0.1	44.24	\$ 1,417.50	\$150	32.0 21.4	_
	Hallway 215	10	T 32 R F 2 (ELE)		F41ILL F42LL	31	0.2	SW	4368 3360	2,01	8 7	4 ft LED Tube T 38 R LED	200732x1 RTLED38	38	0.1	SW	4,368 3,360	1,277	489 739		73.74	\$ 1,016.40 \$ 2,362.50	\$105	32.0	+
	215	10	T 32 R F 2 (ELE)		F42LL F42LL	60	0.6	SW	3360	2,010	6 10	T 38 R LED	RTLED38	38	0.4	SW	3,360	1,277	739	0.2	73.74	\$ 2,362.50	\$250		+
	Hallway	4	T 32 R F 3 (ELE)		F43ILL/2	90	0.4	SW	4368	2,010	2 4	T 59 R LED	RTLED38	38	0.2	SW	4,368	664	909	0.2	88.37	\$ 945.00	\$100	32.0 10.7	_
	Ground Floor Addition Weight Room 50	34	1T 32 R F 2 (ELE) T 32 R F 2 (ELE)		F42LL	60	2.0	SW	3360 3360	6,85	4 34	STLED4 T 38 R LED	STLED4	40	1.4	SW	3,360 3,360	4,570	2,285 444	0.7	227.91	\$ 12,127.80	\$510	53.2 32.0	
	Ground Floor Addition Weight Room 50	6	T 32 R F 2 (ELE)		F42LL	60	0.4	SW	3360	1,21	0 6		RTLED38	38	0.2	SW		766			44.24	\$ 1,417.50	\$150		
	Wrestling Room 52	52	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL	60	3.1	SW	3360	10,483	3 52	STLED4 STLED4	STLED4	40	2.1	SW	3,360	6,989	3,494		348.57		\$780	53.2	
	Band Room 54 54 Storage	45	T 40 R F 4 (ELE)		F42LL F44SE	60	2.7	SW	3360	9,07	2 45	T 50 R LED	STLED4	40	1.8	SW	3,360	6,048	3,024		301.64	\$ 16,051.50	\$675	53.2	+
	Girls Locker Room 56	13	T 32 R F 3 (ELE)		F44SE F43ILL/2	90	1.2	SW	2688 2688	92: 3,14:	5 13	T 50 R LED	PTI ED38	38	0.1	SW	2,688 2,688	269 1,328	656 1,817	0.2	67.19		\$300	7.0 16.5	+
	Girls Locker Room 56	1	2T 17 R F 2 (FLF)		F22LL	31	0.0	SW	2688	8:		2T 25 R LED	2RTLED	25	0.0	SW	2,688	67			1.65			122.6	+
	Hallway	20	2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)		FU2LL	60	1.2	SW	4368	5.24		2T 25 R LED STLED4	2RTLED	25	0.5	SW	4.368	2,184	16 3,058	0.7	297.41	\$ 4,050.00	\$300	13.6	1
	Science 51	24	1T 32 R F 2 (ELE)		F42LL	60	1.4	SW	3360	4,83	8 24		STLED4	40	1.0	SW	3,360	3,226	1,613	0.5	160.88	\$ 8,560.80	\$360	53.2	
	55	12	1T 32 R F 2 (ELE)		F42LL	60	0.7	SW	3360	2,41	9 12	STLED4	STLED4	40	0.5	SW	3,360	1,613		0.2	80.44		\$180	53.2 13.6	4
	Train Room	5	T 32 R F 3 (ELE) S 28 P F 1 (FLF)		F43ILL/2	90	0.5	SW	3360	1,51	2 5	T 59 R LED	RTLED38	38	0.2	SW	3,360	638			87.14	\$ 1,181.25	\$125		+
	storage storage	1 2	S 28 P F 1 (ELE) S 28 P F 1 (ELE)		F41ILL F41ILL	31	0.0	SW	2688 2688	16	7 2	4 ft LED Tube	200732x1 200732x1	15	0.0	SW	2,688 2,688	40	43 86	0.0	4.41 8.81	\$ 145.20 \$ 290.40	\$30	33.0 33.0	+
	storage Gvm	30	T 54 W F 6 (FLF) (T-5)		F46GHL	351	10.5	SW	2688	28,30	5 30	T 54 W F 6 (ELE) (T-5)	F46GHI	351	10.5	SW	2,688	28,305	- 00	0.0	0.01	\$ 230.40	\$0	33.0	+-
	Boys Locker Room	18	1T 32 R F 2 (ELE)		F42LL	60	1.1	SW	2688	2,90	3 18	STLED4	STLED4	40	0.7	SW	2,688	1,935	968	0.4	99.13	\$ 6,420.60	\$270	64.8	
	Boys Locker Room	2	S 32 C F 2 (ELE)		F42LL	60	0.1	SW	2688	32:	3 2	STLED4	STLED4	40	0.1	SW	2,688	215	108	0.0	11.01	\$ 713.40	\$0	64.8	
	Trainer	4	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL F42LL	60	0.2	SW	3024	72	6 4	STLED4 STLED4	STLED4	40	0.2	SW	3,024 3,024	484	242 121	0.1	24.42	\$ 1,426.80 \$ 713.40	\$60	58.4 58.4	_
	Office	2	11 32 R F 2 (ELE) S 17 C F 1(ELE)			60	0.1	SW	3024	36	3 2		STLED4	40	0.1	SW	3,024	242 54	121	0.0	12.21	\$ 713.40	\$30	58.4	_
	Restroom Hallway	23	2T 32 R F 2 (u) (ELE)		F21ILL FU2LL	60	1.4	SW	2688 4368	6.02	8 23	S 17 C F 1(ELE) 2T 25 R LED	F21ILL 2RTI FD	25	0.0	SW	2,688 4,368	2.512	3.516	0.0	342.02	\$ 4.657.50	\$345	13.6	+
	Boys Restroom	1	1T 32 R F 2 (FLF)			60	0.1	SW	2688	16:	1 1	STLED4	STLED4	40	0.0	SW		108			5.51			64.8	_
	Boys Restroom	1	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)		F42LL F41ILL	31	0.0	SW	2688	8:	3 1	4 ft LED Tube	200732x1	15	0.0	SW	2,688 2,688	40	54 43	0.0	4.41	\$ 145.20	\$15	33.0	
	Girls Restroom	1	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)		F42LL	60	0.1	SW	2688	16	1 1	STLED4	STLED4	40	0.0	SW	2,688	108	54 43	0.0	5.51	\$ 356.70	\$15	64.8	
	Girls Restroom	1			F41ILL	31	0.0	SW	2688	8:	3 1	4 ft LED Tube	200732x1	15	0.0	SW	2,688	40			4.41	\$ 145.20	\$15	33.0	
	30	12	1T 32 R F 2 (ELE)		F42LL	60	0.7	C-OCC	3360	2,419	9 12	STLED4	STLED4	40	0.5	C-OCC	3,360	1,613	806	0.2	80.44	\$ 4,280.40	\$180	53.2	_
	31	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL F42LL	60	0.7	C-OCC SW	3360 3360	2,419 2,419	9 12	STLED4 STLED4	STLED4	40	0.5	C-OCC SW	3,360 3,360	1,613	806 806	0.2	80.44 80.44	\$ 4,280.40 \$ 4,280.40	\$180	53.2 53.2	+-
	33	12	1T 32 R F 2 (FLF)		F42LL	60	0.7	SW	3360	2,419		STI FD4	STLED4	40	0.5	SW	3,360	1,613	806		80.44			53.2	+
	35	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL	60	0.7	SW	3360	2,419	9 12	STLED4 STLED4	STLED4	40	0.5	SW	3,360	1,613	806	0.2	80.44	\$ 4,280.40	\$180	53.2	
	37	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL	60	0.7	C-OCC	3360 3360	2,419 2,419	9 12	STLED4 STLED4	STLED4	40	0.5	C-OCC	3,360 3,360	1,613	806 806	0.2	80.44	\$ 4,280.40 \$ 4,280.40	\$180	53.2 53.2	
	39	12	1T 32 R F 2 (ELE)		F42LL	60	0.7	C-OCC		2,419	9 12	STLED4	STLED4	40	0.5	C-OCC	3,360	1,613	806	0.2	80.44	\$ 4,280.40	\$180	53.2	
	41 Lobby	12	1T 32 R F 2 (ELE) 2T 17 R F 3 (ELE)		F42LL F23ILL	60	0.7	C-OCC SW	3360 4368	2,419	9 12	STLED4 2T 25 R LED	STLED4 2RTLED	40	0.5	C-OCC SW	3,360 4,368	1,613	806 577	0.2	80.44 56.08	\$ 4,280.40 \$ 1,215.00	\$180	53.2 21.7	+
	1st Floor Faculty	8	T 32 R F 3 (ELE)		F43ILL/2	90	0.5	SW	3024	2,17	7 8	T 59 R LED	RTLED38	38	0.2	SW	3,024	919		0.1	126.99		\$200	14.9	+
	Small Office	1	1T 32 R F 2 (ELE)		F42LL	60	0.1	SW	3024	18	1 1		STLED4	40	0.0	SW	3,024	121				\$ 356.70	\$15	58.4	
	Storage	1	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL	60	0.1	SW	2688	16	1 1	STLED4 STLED4	STLED4	40	0.0	SW	2,688	108	60 54	0.0	6.11 5.51	\$ 356.70 \$ 356.70	\$15	64.8	
	150	16	T 32 R F 3 (ELE)		F43ILL/2	90	1.4	SW	3360	4,83	8 16	T 59 R LED	RTLED38	38	0.6	SW	3,360	2,043	2,796 2,796	0.8	278.85 278.85	\$ 3,780.00 \$ 3,780.00	\$400	13.6	
	152	16	T 32 R F 3 (ELE)		F43ILL/2	90	1.4	SW	3360	4,83		T 59 R LED	RTLED38 RTLED38	38	0.6	SW	3,360	2,043				\$ 3,780.00	\$400	13.6	+
	154 156	16	T 32 R F 3 (ELE)		F43ILL/2 F43ILL/2	90	1.4	SW	3360 3360	4,83	8 16 9 46	T 59 R LED T 59 R LED	RTLED38	38	0.6	SW	3,360 3,360	2,043	2,796 2,796	0.8	278.85	\$ 3,780.00 \$ 3,780.00	\$400	13.6 13.6	-
	Hallway	20			FU2LL	60	1.2	SW	4368		2 20	2T 25 R LED	2RTLED	25	0.5	SW		2,184			297.41			13.6	+-
	151	8	2T 32 R F 2 (u) (ELE) T 32 R F 3 (ELE)		F43ILL/2	90	0.7	SW	3360	5,242 2,419	9 8	2T 25 R LED T 59 R LED	RTLED38	38	0.3	SW	4,368 3,360	1,021	1,398		139.43		\$200	13.6	+
	153	8	T 32 R F 3 (ELE)		F43ILL/2	90	0.7	SW	3360	2,419		T 59 R LED	RTLED38	38	0.3	SW	3,360	1,021	1,398		139.43	\$ 1,890.00	\$200	13.6	
	155	8	T 32 R F 3 (ELE)		F43ILL/2	90	0.7	SW	3360	2,419	9 8	T 59 R LED	RTLED38	38	0.3	SW	3,360	1,021	1,398		139.43	\$ 1,890.00	\$200	13.6	4
	Conference Room 157	9	T 32 R F 3 (ELE)		F43ILL/2	90	0.8	SW	2016	1,63		T 59 R LED	RTLED38 STLED4	38	0.3	SW	2,016	689	943		100.87			21.1	+
	Library Office	35	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)		F42LL F41ILL	60	2.1	SW	2688 3024	5,64	5 4	STLED4 4 ft LED Tube	200732v1	15	1.4	SW	2,688 3,024	3,763	1,882 194	0.7	192.75	\$ 12,484.50 \$ 580.80	φ3∠3 \$60	64.8 29.7	+
	Office	2	T 32 R F 3 (ELE)		F43ILL/2	90	0.2	SW	3024	54	4 2	T 59 R LED	RTLED38	38	0.1	SW	3,024	230	314		31.75	\$ 472.50		14.9	+
	Hallway	10	2T 32 R F 2 (u) (ELE)		FU2LL	60	0.6	SW	4368	2,62	1 10	2T 25 R LED	2RTLED	25	0.3	SW	4,368	1,092	1,529	0.4	148.71	\$ 2,025.00	\$150	13.6	+
	Storage	1	2T 32 R F 2 (u) (ELE) 2' 20 W F 1 (MAG)		FU2LL F21SS	60	0.1	SW	2688	16		2T 25 R LED 2' 17 W F 1	2RTLED	25	0.0	SW	2,688 2,688	67	94 22	0.0	9.64		\$15	21.0 46.0	I
	Restroom	1	2' 20 W F 1 (MAG)	-	F21SS	28	0.0	SW	2688	75	5 1		F21ILL	20	0.0	SW	2,688	54	22	0.0	2.20	\$ 101.25	\$0	46.0	4
	Restroom	1 1	2T 17 R F 3 (ELE) S 28 P F 1 (FLF)		F23ILL F41ILL	47	0.0	SW	2688	120	5 1	2T 25 R LED	2RTLED	25	0.0	SW	2,688	67	59	0.0	6.06	\$ 202.50 \$ 145.20	\$50	33.4	4
	Restroom	1			F41ILL E40LL	31	0.0	SW	2688	32:	3 1	4 ft LED Tube STLED4	200732x1 STLED4	10	0.0	SW SW	2,688	40	43 108		11.01	\$ 145.20 \$ 713.40	\$10	33.0	+
	Restroom 132	R	1T 32 R F 2 (ELE) 1T 32 R F 2 (FLF)		F42LL F42LL	60	0.1	SW	2688 3360	1,61		STI FD4	STLED4 STLED4	40	0.1	SW	2,688	1 075	108 538	0.0	53.63	\$ 2853.60	\$120	64.8 53.2	+
	130	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL	60	0.5	SW	3360	1,61	3 8	STLED4 STLED4	STLED4	40	0.3	SW	3,360 3,360	1,075	538 538	0.2	53.63	\$ 2,853.60 \$ 2,853.60	\$120	53.2	+
	131	8	1T 32 R F 2 (ELE)		F42LL	60	0.5	SW	3360	1,61	3 8	STLED4 STLED4	STLED4	40	0.3	SW	3,360	1,075	538	0.2	53.63	\$ 2,853.60	\$120	53.2	
Ξ	133	8	1T 32 R F 2 (ELE)		F42LL	60	0.5	SW	3360	1,613	3 8	STLED4	STLED4	40	0.3	SW	3,360	1,075	538	0.2	53.63	\$ 2,853.60	\$120	53.2	
	135	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL	60	0.5	SW	3360 3360	1,61	3 8	STLED4 STLED4	STLED4	40	0.3	SW	3,360 3,360	1,075	538 538	0.2	53.63	\$ 2,853.60 \$ 2,853.60	\$120	53.2 53.2	
	13/	8	11 32 K F 2 (ELE)		F42LL	60	0.5	SW	3360	1,61	3 8	STLED4	STLED4	40	0.3	SW	3,360	1,075			53.63	\$ 2,853.60	\$120	53.2	+
	139 141	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)		F42LL F42LL	60	0.5	SW	3360 3360	1,613	3 8	STLED4 STLED4	STLED4 STLED4	40	0.3	SW	3,360 3,360	1,075	538 538	0.2	53.63 53.63		\$120 \$120	53.2 53.2	+
	Hallway	16	2T 32 R F 2 (u) (ELE)		FU2LL	60	1.0	SW	4368	4,193		2T 25 R LED	2RTLED	25	0.4	SW	4,368	1,747			237.93	\$ 3,240,00	\$240	13.6	+
	Hallway	5	2T 32 R F 2 (u) (ELE)		FU2LL MH100/1	60	0.3	SW	4368	1,310	0 5	2T 25 R LED	2RTLED	25	0.1	SW	4,368	546			74.35	\$ 1,012.50 \$ 9,455.40	\$75	13.6	$\top$
	Exterior Lights	17	MH 100		MH100/1	128	2.2	Breaker	4032	1,310 8,774	4 17	2T 25 R LED FXLED39	FXLED39/1	39	0.7	Breaker	4,032	2,673	764 6,100		74.35 597.59	\$ 9,455.40	\$850	13.6 15.8	
	Exterior Lights	2	QL85/1		QL85/1	85	0.2	Breaker	4032	68		QL85/1 WPLED2T78	QL85/1	85	0.2	Breaker	4,032	685	2,959	0.0		\$ -	\$0	7.1	_
	Exterior Lights Stadium Pole Lights	2	WP400MH1 MH1000 Fixt		MH400/1 MH1000/1	458 1080	0.9	Breaker	4032 4032	3,69 43,54	3 2	WPLED2T78 MH1000 Fixt	WPLED2T78 MH1000/1	1080	0.2 10.8	Breaker	4,032 4,032	734 43,546	2,959	0.7	289.91	\$ 2,048.38	\$200 \$0	/.1	+
	Stadium Pole Lights Stadium Pole Lights	12	MH1000 Fixt		MH1000/1 MH1000/1	1080	13.0	Breaker Breaker	4032	43,54 52.25	5 12	MH1000 Fixt	MH1000/1 MH1000/1	1080	13.0	Breaker Breaker	4,032	43,546 52,255		0.0		š -	\$0		+
-	- Lynu						10.0		1002	02,20	1		110001	1	10.0		.,002	02,200		1		1	1.		+
ıl		1,582					149.3			521,055	1,582		I	9,976	93.1	I		324,076	196,979	56.2	\$19,562	\$447,609	\$27,460		
																							_		-
																		Dema	and Savings h Savings		56.2 196,979	\$2,031 \$17.531			1

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				EXISTING COM	NDITIONS Watts per							Watts per		Retrofit			Annual kWh		COST & SAVINGS	ANALYSIS	NJ Smart Start Lighting	Simple Payback With Out	
Field Code	Area Description Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of Fixtures No. of fixtures before the retrofit	Standard Fixture Code Lighting Fixture Code	Fixture Code  Code from Table of Standard  Fixture Wattages	Fixture Value from Table of	kW/Space (Watts/Fixt) * (Fixt No.)	Pre-inst. Estimated annual control device hours for the	Annual kWh (kW/space) * (Annual Hours)	Number of Fixtures No. of fixtures after the retrofit	Standard Fixture Code  "Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w	Fixture Code Code from Table of Standard Fixture	Fixture Value from Table of	kW/Space (Watts/Fixt) * (Number of	Control Retrofit control device	Annual Hou Estimated annual hours	(kW/space) * (Annual Hours)	Saved (Original Annual kWh) - (Retrofit	Annual kW Saved (Original Annual kW) - (Retrofit	Annual \$ Saved (kW Saved) * (\$/kWh)	Retrofit Cost Cost for renovations to	Incentive	Incentive  Length of time for renovations	Simple Payback  Length of time for renovations cost to
	,				Standard Fixture	,	usage group	, ,		Recess. Floor 2 lamps U shape	Wattages	Standard Fixture	Fixtures)		for the usage group		Annual kWh)	Annual kW)	(4)	lighting system		cost to be recovered	be recovered
202 202 55LED	Ground Floor Main Entrance Main Entrance Vestibule	1	2T 17 R F 4 (ELE) 2T 17 R F 4 (ELE) 2T 17 R F 3 (ELE)	F24ILL F24ILL F23ILL	61 61 47	0.1 0.1	SW 4368 SW 4368	266.4 266.4 1,847.3	1 1	2T 17 R F 4 (ELE) 2T 17 R F 4 (ELE) 2T 17 R F 3 (ELE)	F24ILL F24ILL	61 61	0.1 0.1	C-OCC	4368 4368	266.4 266.4	0.0	0.0	\$0.00 \$0.00	\$270.00 \$270.00	\$20.00 \$20.00		#DIV/0! #DIV/0! #DIV/0!
40LED 5LED	Main Lobby  Nurse Office  Nurse Office Copier Room	10 3	T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F23LL F42LL FU2LL	60 60	0.4 0.6 0.2	SW 4368 SW 3024 SW 3024	1,847. 1,814. 544.	10 3 3	T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F23ILL F42LL FU2LL	60 60	0.4 0.6 0.2	C-OCC	4368 2116.8 2116.8	1,847.7 1,270.1 381.0	544.3 163.3	0.0	\$48.44 \$14.53	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	5.6 18.6	#DIV/0! 5.2 17.2
5LED 39 40LED	Nurse Office Bath Room Nurse Office Storage Exam Room 1	1 1	2T 32 R F 2 (u) (ELE) 2' 17 W F 2 (ELE) T 32 R F 2 (FLF)	FU2LL F22ILL F42LL	60 33 60	0.1 0.0 0.1	SW 2688 SW 2688 SW 3024	161.3 88.3 181.4	3 1 7 1	2T 32 R F 2 (u) (ELE) 2' 17 W F 2 (ELE) T 32 R F 2 (FLF)	FU2LL F22ILL F42LL	60 33 60	0.1 0.0 0.1	C-OCC	1881.6 1881.6 2116.8	112.9 62.1 127.0	48.4 26.6 54.4	0.0	\$4.31 \$2.37 \$4.84	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	62.7 114.0 55.7	58.1 105.6 51.6
40LED	Exam Room 2 Exam Room 3	1	T 32 R F 2 (ELE) T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.1 0.1	SW 3024 SW 3024	181.4 181.4	1	T 32 R F 2 (ELE) T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.1 0.1	C-OCC	2116.8 2116.8	127.0 127.0	54.4 54.4	0.0	\$4.84 \$4.84	\$270.00 \$270.00	\$20.00 \$20.00	55.7 55.7 55.7	51.6 51.6
5LED 15LED 32LED	Nurse Office Bath Room Nurse Office Storage Stair to Nurse Room	2 1	2T 32 R F 2 (u) (ELE) S 32 C F 2 (ELE) 1T 32 R F 2 (ELE)	FU2LL F42LL F42LL	60 60	0.1 0.1 0.1	SW 2688 SW 2688 SW 2688	322.0 322.0 161.3	5 2 3 1	2T 32 R F 2 (u) (ELE) S 32 C F 2 (ELE) 1T 32 R F 2 (ELE)	FU2LL F42LL F42LL	60 60	0.1 0.1 0.1	C-OCC	1881.6 1881.6 1881.6	225.8 225.8 112.9	96.8 96.8 48.4	0.0	\$8.61	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	31.4 31.4 62.7	29.0 29.0 58.1
185LED 32LED 40LED	Storage next to the small stair to Nurse Room  Restroom  Office Space Next to Nurse Office	1 4	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F44SE F42LL F42LL	172 60 60	0.3 0.1 0.2	SW 2688 SW 2688 SW 3024	924.1 161.3 725.8	7 2 3 1 3 4	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F44SE F42LL F42LL	172 60 60	0.3 0.1 0.2	C-00C C-00C	1881.6 1881.6 2116.8	647.3 112.9 508.0	277.4 48.4 217.7	0.0	\$24.69 \$4.31 \$19.38	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	10.9 62.7 13.9	10.1 58.1 12.9
40LED 33	Small Office 1 Small Office 1 Floor Lamp	2 3	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	60 15	0.1 0.0	SW 3024 SW 3024	362.5 136.5	3	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	60 15	0.1 0.0	C-OCC	2116.8 2116.8	254.0 95.3	108.9 40.8	0.0	\$9.69 \$3.63	\$270.00 \$270.00	\$20.00 \$20.00	27.9 74.3	25.8 68.8
33 40LED	Small Office 2 Small Office 2 Small Office 3	1 2	T 32 R F 2 (ELE) 13 W CF 1 T 32 R F 2 (ELE)	F42LL CFQ13/1-L F42LL	60 15 60	0.1 0.0 0.1	SW 3024 SW 3024 SW 3024	362.5 45.4 362.5	1 1	T 32 R F 2 (ELE) 13 W CF 1 T 32 R F 2 (ELE)	F42LL CFQ13/1-L F42LL	15 60	0.1 0.0 0.1	C-OCC C-OCC	2116.8 2116.8 2116.8	254.0 31.8 254.0	108.9 13.6 108.9	0.0	\$1.21	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	27.9 222.9 27.9	25.8 206.4 25.8
33 40LED 35LED	Small Office 3 Pathways Office Pathways Office	3 3 1	13 W CF 1 T 32 R F 2 (ELE) T 32 R F 3 (ELE)	CFQ13/1-L F42LL F43ILL/2	15 60 90	0.0 0.2 0.1	SW 3024 SW 3024 SW 3024	136. 544. 272.	3 3	13 W CF 1 T 32 R F 2 (ELE) T 32 R F 3 (ELE)	CFQ13/1-L F42LL F43ILL/2	15 60 90	0.0 0.2 0.1	C-000 0-000	2116.8 2116.8 2116.8	95.3 381.0 190.5	40.8 163.3 81.6	0.0	\$3.63 \$14.53 \$7.27	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	74.3 18.6 37.2	68.8 17.2 34.4
40LED 35LED	Pathways Small Office Pathways Small Office	2 2	T 32 R F 2 (ELE) T 32 R F 3 (ELE) T 32 R F 2 (ELE)	F42LL F43ILL/2	60 90	0.1 0.2	SW 3024 SW 3024	362.9 544.1	2 2	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60 90	0.1 0.2	C-OCC	2116.8 2116.8	254.0 381.0	108.9 163.3	0.0	\$9.69 \$14.53	\$270.00 \$270.00	\$20.00 \$20.00	27.9 18.6 13.9	25.8 17.2
40LED 185LED 40LED	Pathways Conference Room Hallway Instrumental Music	8 4	T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F42LL F44SE F42LL	172 60	1.4 0.2	SW 2016 SW 4368 SW 3360	6,010.4 806.4	8 4 8 4 4	T 32 R F 2 (ELE) T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F42LL F44SE F42LL	172 60	1.4 0.2	C-OCC C-OCC	4368 2352	564.5	0.0 241.9	0.0		\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	12.5	#DIV/0! 11.6
40LED 40LED 40LED	Instrumental Music Office Instrumental Music Storage R24	2 2 8	T 32 R F 2 (ELE) T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.1 0.1 0.5	SW 3024 SW 2688 SW 3360	362.9 322.0 1,612.8	2 5 2 8 8	T 32 R F 2 (ELE) T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.1 0.1 0.5	C-OCC C-OCC	2116.8 1881.6 2352	254.0 225.8 1,129.0	108.9 96.8 483.8	0.0	\$9.69 \$8.61 \$43.06	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	27.9 31.4 6.3	25.8 29.0 5.8
40LED 33	Restroom Closet	2 1	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	60 15	0.1 0.0	SW 2688 SW 2688	322.6 40.3	3 2 3 1	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	60 15	0.1 0.0	C-OCC	1881.6 1881.6	28.2	96.8 12.1	0.0	\$1.08	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	31.4 250.8	29.0 232.2
15LED 35LED 35LED	Cafeteria Kitchen Kitchen Office	13 4	S 32 C F 2 (ELE) T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2 F43ILL/2	90 90	4.8 1.2 0.4	SW 2688 SW 2688 SW 3024	12,902.4 3,145.0 1,088.0	6 4	S 32 C F 2 (ELE) T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2 F43ILL/2	90 90	4.8 1.2 0.4	C-OCC	2688 2688 2116.8	12,902.4 3,145.0 762.0	0.0 0.0 326.6	0.0	\$0.00 \$29.07	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	9.3	#DIV/0! #DIV/0! 8.6
5LED 5LED 121	Restroom Closet Back Closet	1 1	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE) W 34 P F 4	FU2LL FU2LL F44EE	60 60 144	0.1 0.1 0.1	SW 2688 SW 2688 SW 2688	161.3 161.3 387.1	3 1 3 1	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE) W 34 P F 4	FU2LL FU2LL F44EE	60 60 144	0.1 0.1 0.1	C-OCC C-OCC	1881.6 1881.6 1881.6	112.9 112.9 271.0	48.4 48.4 116.1	0.0 0.0 0.0	\$4.31 \$4.31 \$10.33	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	62.7 62.7 26.1	58.1 58.1 24.2
3 35LED 32LED	Back Closet Dishwash Room	1 3	W 34 W F 1 (MAG) T 32 R F 3 (ELE) 1T 32 R F 2 (ELE)	F41EE F43ILL/2 F42LL	43 90	0.0	SW 2688 SW 2688	115.6 725.8 161.3	3 3	W 34 W F 1 (MAG) T 32 R F 3 (ELE) 1T 32 R F 2 (ELE)	F41EE F43ILL/2 F42LL	43 90	0.0	C-OCC	1881.6 2688	80.9 725.8 161.3	34.7 0.0	0.0	\$3.09 \$0.00	\$270.00 \$270.00	\$20.00 \$20.00	87.5	81.0 #DIV/0! #DIV/0!
5LED 20LED	Dishwash Room Dishwash Room Stair	1 2	2T 32 R F 2 (u) (ELE) S 28 P F 1 (ELE)	FU2LL F41ILL	60 31	0.1 0.1 0.1	SW 2688 SW 2688 SW 4368	161.3 270.8	3 1 3 2	2T 32 R F 2 (u) (ELE) S 28 P F 1 (ELE)	FU2LL F41ILL	60 60 31	0.1 0.1 0.1	C-OCC	2688 2688 4368	161.3 270.8	0.0	0.0	\$0.00 \$0.00 \$0.00	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00		#DIV/0! #DIV/0!
35LED 35LED 61LED	Stair Hallway Hallway	1 1 3	T 32 R F 3 (ELE) T 32 R F 3 (ELE) T 34 R F 3 (MAG)	F43ILL/2 F43ILL/2 F43EE	90 90 115	0.1 0.1 0.3	SW 4368 SW 4368 SW 4368	393.1 393.1 1,507.0		T 32 R F 3 (ELE) T 32 R F 3 (ELE) T 34 R F 3 (MAG)	F43ILL/2 F43ILL/2 F43EE	90 90 115	0.1 0.1 0.3	C-OCC C-OCC	4368 4368 4368	393.1 393.1 1,507.0	0.0 0.0 0.0			\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00		#DIV/0! #DIV/0! #DIV/0!
30 5LED 32LED	Auditorium Auditorium	14 8	1 B 96 C F 2 (MAG) 2T 32 R F 2 (u) (ELE)	F82EHS FU2LL F42LL	227 60	3.2 0.5 0.5	SW 2688 SW 2688	8,542.5 1,290.2	8 8	1 B 96 C F 2 (MAG) 2T 32 R F 2 (u) (ELE)	F82EHS FU2LL F42LL	227 60	3.2 0.5	C-OCC	2688 2688	8,542.5 1,290.2	0.0	0.0	\$0.00	\$270.00 \$270.00	\$20.00 \$20.00		#DIV/0! #DIV/0! #DIV/0!
32LED 46LED	Hallway Boiler Room Boiler Room	11 1	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) W 32 P F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42ILL	60 59	0.7 0.1	SW 4368 SW 8736 SW 8736	2,096.6 5,765.8 515.4 1,088.6		1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) W 32 P F 2 (ELE)	F42LL F42ILL	60 59	0.5 0.7 0.1	C-OCC	4368 8736 8736	2,096.6 5,765.8 515.4	0.0	0.0	\$0.00 \$0.00	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00		#DIV/0! #DIV/0!
32LED 32LED 35LED	Office Office Athelic Director	6	1T 32 R F 2 (ELE)	F42LL F42LL F43ILL/2	60 60 90	0.4 0.4 0.4	SW 3024 SW 3024 SW 3024	1,088.6 1,088.6	6	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F42LL F43ILL/2	60 60 90	0.4 0.4 0.4	C-OCC C-OCC	2116.8 2116.8 2116.8	762.0 762.0 762.0	326.6 326.6 326.6			\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	9.3 9.3 9.3	8.6 8.6 8.6
32LED 185LED 32LED	Room 4 Room 6 Office	13 12	T 32 R F 3 (ELE) 1T 32 R F 2 (ELE) T 40 R F 4 (ELE) 1T 32 R F 2 (ELE)	F42LL F44SE F42LL	60 172 60	0.8 2.1 0.1	SW 3024 C-OCC 3024 SW 3024	2,358.1 6,241.1 181.4	13	1T 32 R F 2 (ELE) T 40 R F 4 (ELE) 1T 32 R F 2 (ELE)	F42LL F44SE F42LL	60 172 60	0.8 2.1	NONE C-OCC	2116.8 3024 2116.8	1,651.1 6,241.5	707.6 0.0 54.4	0.0	\$62.98 \$0.00 \$4.84	\$270.00 \$0.00 \$270.00	\$20.00 \$0.00 \$20.00	4.3 55.7	4.0 #DIV/0! 51.6
35LED 35LED	Apt Classroom 10 Apt Classroom 10	6	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.5 0.5	SW 3360 SW 3360	1,814.4 1,814.4	6	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.5 0.5	C-OCC C-OCC	2352 2352	1,270.1 1,270.1	544.3 544.3	0.0		\$270.00 \$270.00	\$20.00 \$20.00	5.6 5.6	5.2 5.2
32LED 32LED 32LED	Closet Girls Restroom 1st Floor Room129		1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.1 0.1 0.7	SW 2688 SW 2688 SW 3360	161.3 322.6 2,419.3	3 1 3 2 12 12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.1 0.1 0.7	C-OCC C-OCC	1881.6 1881.6 2352	112.9 225.8 1,693.4	48.4 96.8 725.8	0.0	\$4.31 \$8.61 \$64.59	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	62.7 31.4 4.2	58.1 29.0 3.9
32LED 32LED 35LED	Room 127 Room 127 Office	8 2 3	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F42LL F43ILL/2	60 60	0.5 0.1 0.3	SW 3360 SW 3360 SW 3024	1,612.8 403.2 816.5	2 2	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F42LL F43ILL/2	60 60	0.5 0.1 0.3	C-000	2352 2352 2116.8	1,129.0 282.2 571.5	483.8 121.0 244.9	0.0	\$43.06 \$10.77	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	6.3 25.1 12.4	5.8 23.2 11.5
32LED 32LED	125 123	14 14	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F44SE	60 60	0.8 0.8	SW 3360 SW 3360	2,822.4 2,822.4	14	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F42LL	60 60	0.8 0.8	C-OCC	2352 2352	1,975.7 1,975.7	846.7 846.7	0.0	\$75.36	\$270.00 \$270.00	\$20.00 \$20.00	3.6 3.6	3.3 3.3
185LED 35LED 20LED	Restroom Book Storage Restroom	4 2	T 40 R F 4 (ELE) T 32 R F 3 (ELE) S 28 P F 1 (ELE)	F43ILL/2 F41ILL	90 31	0.3 0.4 0.1	SW 2688 SW 2688 SW 2688	924. 967. 166.	7 4 7 2	T 32 R F 3 (ELE) S 28 P F 1 (ELE)	F44SE F43ILL/2 F41ILL	90 31	0.3 0.4 0.1	C-OCC	1881.6 1881.6	677.4 116.7	277.4 290.3 50.0	0.0	\$24.69 \$25.84 \$4.45	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	10.9 10.5 60.7	9.7 56.2
32LED 32LED 185LED	124A 124B 126	16 6	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F42LL F44SE	60 60 172	1.0 0.4 1.0	SW 3360 SW 3360 SW 3360	3,225.6 1,209.6 3,467.5		1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F42LL F44SE	60 60 172	1.0 0.4 1.0	C-000 0-000	2352 2352 2352	2,257.9 846.7 2,427.3	967.7 362.9 1,040.3	0.0	\$32.30	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	3.1 8.4 2.9	2.9 7.7 2.7
32LED 40LED	128 128		1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60 15	0.5 0.2	SW 3360 SW 3360	1,612.8 806.4 40.3	8 4	1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60 60 15	0.5 0.2 0.0	C-OCC	2352 2352	1,129.0 564.5	483.8 241.9 12.1	0.0	\$43.06 \$21.53	\$270.00 \$270.00	\$20.00 \$20.00	6.3 12.5	5.8 11.6
33 20LED 185LED	Restroom storage 112	1 6	13 W CF 1 S 28 P F 1 (ELE) T 40 R F 4 (ELE)	CFQ13/1-L F41ILL F44SE	31 172	0.0 0.0 1.0	SW 2688 SW 2688 C-OCC 3360 C-OCC 3360	83.3 3,467.5	1 6	13 W CF 1 S 28 P F 1 (ELE) T 40 R F 4 (ELE)	CFQ13/1-L F41ILL F44SE	31 172	0.0 1.0	C-OCC NONE	1881.6 1881.6 3360 3360	28.2 58.3 3.467.5 3,467.5	25.0 0.0	0.0	\$2.22 \$0.00	\$270.00 \$270.00 \$0.00	\$20.00 \$20.00 \$0.00	250.8 121.4	232.2 112.4 #DIV/0!
185LED 185LED 40LED	110 108 Hallway	6 6 5	T 40 R F 4 (ELE) T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F44SE F44SE F42LL	172 172 60	1.0 1.0 0.3	C-OCC 3360 C-OCC 3360 SW 4368	3,467.5 3,467.5 1,310.4	6 6 4 5	T 40 R F 4 (ELE) T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F44SE F44SE F42LL	172 172 60	1.0 1.0 0.3	NONE NONE C-OCC	3360 3360 4368	3,467.5 3,467.5 1,310.4	0.0 0.0 0.0	0.0 0.0 0.0		\$0.00 \$0.00 \$270.00	\$0.00 \$0.00 \$20.00		#DIV/0! #DIV/0! #DIV/0!
5LED 40LED 185LED	Hallway Hallway 106	5	2T 32 R F 2 (u) (ELE) T 32 R F 2 (ELE) T 40 R F 4 (ELE)	FU2LL F42LL F44SE	60 60 172	1.2 0.3 1.0	SW 4368 SW 4368 SW 3360	5,241.6 1,310.4 3,467.5	20	2T 32 R F 2 (u) (ELE) T 32 R F 2 (ELE) T 40 R F 4 (ELE)	FU2LL F42LL F44SE	60 60 172	1.2 0.3 1.0	C-OCC	4368 4368 2352	5,241.6	0.0 0.0 1,040.3		\$0.00		\$20.00 \$20.00 \$20.00	2.9	#DIV/0! #DIV/0! 2.7
185LED 40LED	Office Principle Office	3 3	T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F44SE F42LL	172 60	0.5 0.2	SW 3024 SW 3024	1,560.4 544.3	3 3	T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F44SE F42LL	172 60	0.5 0.2	C-OCC	2116.8 2116.8	1,092.3 381.0	468.1 163.3	0.0	\$41.66 \$14.53	\$270.00 \$270.00	\$20.00 \$20.00	6.5 18.6	6.0 17.2
5LED 185LED 5LED 5LED	Main Office Hallway Guidance Office	7 4	2T 32 R F 2 (u) (ELE) T 40 R F 4 (ELE) 2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL F44SE FU2LL	60 172 60	0.7 1.2 0.2	SW 3024 SW 4368 SW 3024	2,177.3 5,259.7 725.8	12 7 3 4	2T 32 R F 2 (u) (ELE) T 40 R F 4 (ELE) 2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL F44SE FU2LL	60 172 60	0.7 1.2 0.2	C-OCC	2116.8 4368 2116.8	508.0	653.2 0.0 217.7	0.0	\$0.00 \$19.38	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	4.6 13.9	4.3 #DIV/0! 12.9
5LED	Guidance Office Guidance Office Guidance Office	6	2T 32 R F 2 (u) (ELE)	FU2LL FU2LL FU2LL	60 60 60	0.2 0.4 0.1	SW 3024 SW 3024 SW 3024	725.8 1,088.6	8 4 6 6	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL FU2LL	60 60 60	0.2 0.4 0.1	C-OCC	2116.8 2116.8 2116.8	508.0 762.0 254.0	217.7 326.6 108.9		\$19.38 \$29.07	\$270.00	\$20.00 \$20.00 \$20.00	13.9 13.9 9.3 27.9	12.9 8.6 25.8
5LED 5LED 5LED 5LED	Guidance Office Guidance Office	4 3	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL FU2LL	60 60	0.2 0.2	SW 3024 SW 3024	362.5 725.6 544.3 544.3	3 4 3	27 32 R F 2 (u) (ELE) 27 32 R F 2 (u) (ELE) 27 32 R F 2 (u) (ELE)	FU2LL FU2LL	60 60	0.2	C-OCC	2116.8 2116.8 2116.8	381.0	108.9 217.7 163.3		\$19.38 \$14.53	\$270.00 \$270.00	\$20.00 \$20.00 \$20.00	13.9 18.6 18.6	12.9 17.2 17.2
32LED 32LED	Guidance Office Spec Ed 109 109 Small Office	8 8	2T 32 R F 2 (ω) (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60 60	0.2 0.5 0.5	SW 3024 SW 3360 SW 3360	1,612.8 1,612.8	3 8 8 8	2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)	FU2LL F42LL F42LL	60 60 60	0.2 0.5 0.5	C-OCC C-OCC	2116.8 2352 2352	1,129.0	163.3 483.8 483.8	0.0	\$43.06 \$43.06	\$270.00	\$20.00 \$20.00 \$20.00	6.3 6.3	5.8 5.8
32LED 32LED 5LED	111 113 Hallway	10 10 20	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42LL F42LL FU2LL	60 60 60	0.6 0.6 1.2	SW 3360 SW 3360 SW 4368	2,016.0 2,016.0 5,241.0	10 10 10 20	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42LL F42LL FU2LL	60 60 60	0.6 0.6 1.2	C-OCC	2352 2352 4368	1,411.2 1,411.2 5.241.6	604.8 604.8 0.0	0.0	\$53.83	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	5.0 5.0	4.6 4.6 #DIV/0!
40LED 32LED 40LED	115 117	8 14	T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.5 0.8	SW 3360 SW 3360	1,612.8 2,822.4	8 8	T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.5 0.8	C-OCC	2352 2352	1,129.0 1,975.7	483.8 846.7	0.0	\$43.06 \$75.36	\$270.00 \$270.00	\$20.00 \$20.00	6.3 3.6	5.8 3.3
32LED 32LED	Hallway 2nd Floor Room 229 227	22 12	T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.2 1.3 0.7	SW 4368 SW 3360 SW 3360	1,048.3 4,435.3 2,419.3 2,419.3	2 22 12	T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	60 60 60	0.2 1.3 0.7	C-OCC	4368 2352 2352	3,104.6 1,693.4	0.0 1,330.6 725.8		\$118.42 \$64.59		\$20.00 \$20.00 \$20.00	2.3 4.2	#DIV/0! 2.1 3.9
32LED 32LED 35LED	225 223 Restroom	12 12 2	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F42LL F43ILL/2	60 60 90	0.7 0.7 0.2	SW 3360 SW 3360 SW 2688	2,419.2 2,419.2 483.8	12 12 12 13	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F42LL F43ILL/2	60 60 90	0.7 0.7 0.2	C-OCC C-OCC	2352 2352 1881.6	1,693.4 1,693.4 338.7	725.8 725.8 145.2	0.0	\$64.59 \$64.59 \$12.92	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	4.2 4.2 20.9	3.9 3.9 19.4
185LED 32LED 35LED	Hallway Storage Restroom	40	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F44SE F42LL F43ILL/2	172 60	6.9 0.1	SW 4368 SW 2688 SW 2688	30,051.8 161.3 483.8	40	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F44SE F42LL F43ILL/2	172 60	6.9 0.1	C-000		30,051.8 112.9 338.7	0.0 48.4 145.2		\$0.00 \$4.31		\$20.00 \$20.00 \$20.00	62.7 20.9	#DIV/0! 58.1 19.4
32LED 32LED	224 226	12 16	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.2 0.7 1.0	SW 3360 SW 3360	2,419.2 3,225.6	12 16	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60 60	0.2 0.7 1.0	C-OCC	2352 2352	1,693.4 2,257.9	725.8 967.7	0.0	\$64.59 \$86.12	\$270.00 \$270.00	\$20.00 \$20.00 \$20.00	4.2 3.1	3.9 2.9
32LED 185LED 40LED	228 Hallway 212	16 5 6	1T 32 R F 2 (ELE) T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F42LL F44SE F42LL	60 172 60	1.0 0.9 0.4	SW 3360 SW 4368 SW 3360	3,225.6 3,756.5	16 5 5	1T 32 R F 2 (ELE) T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F42LL F44SE F42LL	60 172 60	1.0 0.9 0.4	C-OCC	2352 4368 2352	2,257.9 3,756.5 846.7	967.7 0.0 362.9	0.0 0.0 0.0	\$0.00	\$270.00 \$270.00 \$270.00	\$20.00 \$20.00 \$20.00	3.1 8.4	2.9 #DIV/0! 7.7
40LED 185LED	Office Faculty	2 2	T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F44SE	60 172	0.1	SW 3024 SW 3024	1,209.6 362.5 1,040.3 1,310.4	2 2	T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F44SE	60 172	0.1	C-OCC	2116.8 2116.8	254.0 728.2	108.9 312.1		\$9.69	\$270.00	\$20.00 \$20.00 \$20.00	27.9 9.7	25.8 9.0 #DIV/0!
40LED 35LED	Hallway Vocal Music	5 21	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60 90	0.3 1.9	SW 4368 SW 3360	1,310.4 6,350.4	5 21	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60 90	0.3 1.9	C-OCC	4368 2352	1,310.4 4,445.3	0.0 1,905.1	0.0	\$0.00 \$169.56	\$270.00 \$270.00	\$20.00 \$20.00	1.6	#DIV/0! 1.5

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				EXISTING COND	DITIONS							RETROFIT	CONDITIONS							COST & SAVIN	NGS ANALYSIS			
					Watts per								Watts per		Retrofit			Annual kWh				NJ Smart Start Lighting	Simple Payback With Out	
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixture	Standard Fixture Code	Fixture Code	Fixture	kW/Space	Control	Annual Ho	urs Annual kWh	Saved	Annual kW Saved	Annual \$ Saved	d Retrofit Cost	Incentive	Incentive	Simple Payba
eld Code U	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of	(Watts/Fixt) * (Fixt	Pre-inst. control device	Estimated annua hours for the	(kW/space) * (Annual Hours)	No. of fixtures afte the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w	Code from Table of Standard Fixture	Value from Table of	(Watts/Fixt) * (Number of	Retrofit contro device	Estimated annual hours	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit	(Original Annual kW) - (Retrofit	(kW Saved) * (\$/kWh)	Cost for renovations to		Length of time for renovations	Length of time
	name: Floor number (if applicable)	before the retrofit		Fixture wattages	Standard	No.j	control device	usage group	(Annual Hours)	the retront	Recess. Floor 2 lamps U shape	Wattages	Standard	Fixtures)	device	for the usage		Annual kWh)	Annual kW)	(\$/KVVII)	lighting system		cost to be	be recovere
					Fixture							1	Fixture			group							recovered	
85LED	208	6	T 40 R F 4 (ELE)	F44SE	172	1.0	SW	3360	3.467.5	6	T 40 R F 4 (ELE)	F44SE	172	1.0	C-OCC	2352	2,427.3	1,040.3	0.0	\$92.58	\$270.00	\$20.00	2.9	2.7
85LED 85LED 40LED 40LED	206	6	T 40 R F 4 (ELE)	F44SE F42LL	172	1.0	SW	3360	3,467.5 3,467.5	6	T 40 R F 4 (ELE)	F44SE	172	1.0	C-OCC	2352	2.427.3	1,040.3	0.0	\$92.58	\$270.00	\$20.00	2.9	2.7
40LED 40LED	204 202	6	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60	0.4	SW	3360 3360	1,209.6 1,209.6	6	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60	0.4	C-OCC	2352	846.7 846.7	362.9 362.9	0.0	\$32.30 \$32.30	\$270.00 \$270.00	\$20.00 \$20.00	8.4 8.4	7.7
40LED	203	6	T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3360	1,209.6 1,008.0	6	T 32 R F 2 (ELE)	F42LL	60	0.4	C-OCC	2352	846.7	362.9	0.0	\$32.30	\$270.00	\$20.00	8.4	7.7
40LED	205	5	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60	0.3	SW	3360 3360	1,008.0 806.4	5	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	60	0.3	0.000	2352	705.6	302.4 241.9	0.0	\$26.91	\$270.00 \$270.00	\$20.00 \$20.00	10.0 12.5	9.3
40LED 40LED	209	6	T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3360	1,209.6	6	T 32 R F 2 (ELE)	F42LL	60	0.4	C-OCC	2352	846.7	362.9	0.0	\$32.30	\$270.00	\$20.00	8.4	7.7
40LED 20LED	211	6	T 32 R F 2 (ELE) S 28 P F 1 (ELE)	F42LL F41ILL	60	0.4	SW	3360 4368	1,209.6 947.9	6	T 32 R F 2 (ELE) S 28 P F 1 (ELE)	F42LL F41ILL	60	0.4	C-OCC	2352	846.7	362.9	0.0	\$32.30	\$270.00	\$20.00	8.4	7.7 #DIV/0!
40LED	Hallway 215	10	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL	60	0.6	SW	3360	2,016.0	10	T 32 R F 2 (ELE)	F42LL	60	0.6	C-OCC	4368 2352	1,411.2	604.8	0.0	\$53.83	\$270.00	\$20.00	5.0	4.6
40LED 35LED	217	10	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60	0.6	SW	3360 4368	2,016.0 1,572.5	10	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60	0.6	C-OCC	2352 4368	1,411.2 1.572.5	604.8	0.0	\$53.83	\$270.00	\$20.00	5.0 5.0	4.6 #DIV/0!
32LED	Hallway Ground Floor Addition Weight Room 50	34	1T 32 R F 2 (ELE)	F43ILL/2 F42LL	60	2.0	SW		1,572.5	34	17 32 R F 2 (ELE)	F43ILU/2 F42LL	60	0.4 2.0	C-OCC	2352	4,798.1	2,056.3	0.0	\$0.00 \$183.01	\$270.00 \$270.00	\$20.00 \$20.00	1.5	1.4
40LED	Ground Floor Addition Weight Room 50	6	1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL	60	0.4	SW	3360 3360	6,854.4 1,209.6	6	1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL	60	0.4	C-OCC	2352	846.7	362.9	0.0	\$32.30	\$270.00	\$20.00	8.4	7.7
32LED 32LED	Wrestling Room 52 Band Room 54	52 45	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	3.1	SW	3360 3360	10,483.2 9,072.0	52 45	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	3.1	C-OCC	2352	7,338.2 6,350.4	3,145.0 2,721.6	0.0	\$279.90 \$242.22	\$270.00 \$270.00	\$20.00 \$20.00	1.0	0.9
85LED 35LED	54 Storage	2	T 40 R F 4 (ELE) T 32 R F 3 (ELE)	F44SE F43ILL/2	172	0.3	SW	2688	924.7 3,145.0	2	T 40 R F 4 (ELE) T 32 R F 3 (ELE)	F44SE F43ILL/2	172	0.3	C-OCC	1881.6	647.3	277.4	0.0	\$24.69	\$270.00	\$20.00	10.9	10.1
35LED	Girls Locker Room 56	13		F43ILL/2	90	1.2	SW	2688	3,145.0	13		F43ILL/2	90	1.2	C-OCC	2688	3,145.0	0.0	0.0	\$0.00	\$270.00	\$20.00		#DIV/0!
98LED 5LED 32LED	Girls Locker Room 56 Hallway	20	2T 17 R F 2 (ELE) 2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)	F22LL FU2LL	60	1.2	SW	2688 4368	83.3 5,241.6 4,838.4	20	2T 17 R F 2 (ELE) 2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)	F22LL FU2LL	60	0.0 1.2	0.000	2688 4368	83.3 5,241.6	0.0	0.0	\$0.00 \$0.00	\$270.00 \$270.00	\$20.00 \$20.00		#DIV/0! #DIV/0!
	Science 51	24	1T 32 R F 2 (ELE)	F42LL	60	1.4	SW	3360		24		F42LL	60	1.4	C-OCC	2352	3,386.9	1,451.5	0.0	\$129.19	\$270.00 \$270.00	\$20.00	2.1	1.9
32LED 35LED	55 Train Room	12 5	1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	90	0.7	SW	3360 3360	2,419.2 1,512.0	12	1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	90	0.7	C-OCC	2352	1,693.4 1,058.4	725.8 453.6	0.0	\$64.59 \$40.37	\$270.00 \$270.00	\$20.00 \$20.00	4.2 6.7	3.9
20LED 20LED	storage	1	S 28 P F 1 (ELE)	F41ILL	31	0.0	SW	2688 2688	83.3	1	S 28 P F 1 (ELE)	F41ILL	31	0.0	C-OCC	1881.6	58.3	25.0	0.0	\$2.22	\$270.00	\$20.00	121.4 60.7	112.4
20LED 252	storage Gym	2	S 28 P F 1 (ELE) T 54 W F 6 (FLF) (T-5)	F41ILL F46GHI	31	0.1	SW	2688	166.7 28 304 6	2 20	S 28 P F 1 (ELE)	F41ILL F46GHL	31	0.1	0.000	1881.6	116.7 28,304.6	50.0	0.0	\$4.45	\$270.00	\$20.00 \$20.00	60.7	56.2 #DIV/01
252 32LED	Boys Locker Room	18	T 54 W F 6 (ELE) (T-5) 1T 32 R F 2 (ELE)	F46GHL F42LL	60	1.1	SW	2688 2688	28,304.6 2,903.0	18	T 54 W F 6 (ELE) (T-5) 1T 32 R F 2 (ELE)	F42LL	60	1.1	C-OCC	2688 2688	2,903.0	0.0	0.0	\$0.00	\$270.00	\$20.00		#DIV/0! #DIV/0!
15LED	Boys Locker Room	2	S 32 C F 2 (ELE)	F42LL	60	0.1	SW	2688	322.6 725.8	2	S 32 C F 2 (ELE)	F42LL	60	0.1	C-OCC	2688	322.6 508.0	0.0	0.0	\$0.00	\$270.00	\$20.00	120	#DIV/0!
32LED 32LED	Trainer Office	2	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.1	SW	3024 3024	362.9	2	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.1	C-OCC	2116.8		108.9	0.0	\$19.38 \$9.69	\$270.00 \$270.00	\$20.00 \$20.00	13.9 27.9	12.9 25.8
220 5LED	Restroom	1	S 17 C F 1(ELE) 2T 32 R F 2 (u) (ELE)	F21ILL FU2LL	20	0.0	SW	2688	53.8	1	S 17 C F 1(ELE)	F21ILL	20	0.0	C-OCC	1881.6	37.6	16.1	0.0	\$1.44	\$270.00	\$20.00	188.1	174.2
32LED	Hallway Boys Restroom	23	2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)	FU2LL F42LL	60	1.4	SW	4368 2688	6,027.8	23	2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (ELE)	FU2LL F42LL	60	0.1	C-OCC	4368 1881.6	6,027.8	0.0 48.4	0.0	\$0.00	\$270.00 \$270.00	\$20.00 \$20.00	62.7	#DIV/0! 58.1
20LED	Boys Restroom	1	S 28 P F 1 (ELE)	F41ILL	31	0.0	SW	2688 2688	83.3	1	S 28 P F 1 (ELE)	F41ILL	31	0.0	C-OCC	1881.6	58.3	25.0	0.0	\$2.22	\$270.00 \$270.00	\$20.00	121.4	112.4
32LED 20LED	Girls Restroom Girls Restroom	1	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)	F42LL F41ILL	60	0.1	SW	2688 2688	161.3	1 1	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)	F42LL F41ILL	60	0.1	0.000	1881.6 1881.6	112.9	48.4	0.0	\$4.31	\$270.00 \$270.00	\$20.00 \$20.00	62.7 121.4	58.1 112.4
32LED	30	12	1T 32 R F 2 (ELE)	F42LL	60	0.7	C-OCC	3360	2,419.2	12	1T 32 R F 2 (ELE)	F42LL	60	0.7	NONE	3360	2,419.2	0.0	0.0	\$0.00	\$0.00	\$0.00	121.4	#DIV/0!
32LED	32	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.7	C-OCC	3360 3360	2,419.2 2,419.2	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LI	60	0.7	NONE	3360	2,419.2	0.0	0.0	\$0.00 \$64.59	\$0.00 \$270.00	\$0.00	4.0	#DIV/0!
32LED 32LED	33	12	1T 32 R F 2 (ELE)	F42LL F42L1	60	0.7	SW	3360	2,419.2	12	11 32 R F 2 (ELE) 1T 32 R F 2 (FLF)	F42LL F42LL	60	0.7	C-OCC	2352	1,693.4	725.8	0.0		\$270.00	\$20.00	4.2 4.2	3.9
32LED 32LED	35	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.7	SW	3360	2,419.2 2,419.2	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.7	C-OCC	2352	1,693.4	725.8	0.0	\$64.59 \$64.59	\$270.00	\$20.00	4.2	3.9
32LED 32LED	37 39	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.7	C-OCC	3360 3360	2,419.2 2,419.2	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.7	NONE NONE	3360 3360	2,419.2 2,419.2	0.0	0.0	\$0.00	\$0.00	\$0.00 \$0.00		#DIV/0! #DIV/0!
32LED 55LED	41	12	1T 32 R F 2 (ELE) 2T 17 R F 3 (ELE)	F42LL	60	0.7	C-OCC	3360 4368	2,419.2 1,231.8	12	1T 32 R F 2 (ELE) 2T 17 R F 3 (ELE)	F42LL	60	0.7	NONE	3360	2,419.2	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0!
55LED 35LED	Lobby 1st Floor Faculty	6	2T 17 R F 3 (ELE) T 32 R F 3 (ELE)	F23ILL F43ILL/2	47 90	0.3	SW	4368 3024	1,231.8 2,177.3	6	2T 17 R F 3 (ELE) T 32 R F 3 (ELE)	F23ILL F43ILL/2	47	0.3	C-OCC	4368 2116.8	1,231.8 1,524.1	0.0 653.2	0.0	\$0.00 \$58.13	\$270.00 \$270.00	\$20.00 \$20.00	4.6	#DIV/0! 4.3
32LED	Small Office	1	17 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	3024	181.4 161.3	1	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.1	C-OCC	2116.8	127.0	54.4	0.0	\$4.84	\$270.00	\$20.00	55.7	51.6
32LED	Storage	1	1T 32 R F 2 (ELE)	F42LL	60	0.1	SW	2688	161.3 4,838.4	1 10	1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60	0.1	C-OCC	1881.6	112.9 3.386.9	48.4	0.0	\$4.31	\$270.00	\$20.00	62.7	58.1
35LED 35LED	150 152	16	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.4	SW	3360 3360	4,838.4	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	C-OCC	2352	3,386.9	1,451.5 1,451.5	0.0	\$129.19 \$129.19	\$270.00	\$20.00	2.1	1.9
35LED 35LED	154	16	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	1.4	SW	3360	4,838.4 4,838.4	16	T 32 R F 3 (ELE)	F43ILL/2	90	1.4	C-OCC	2352	3,386.9	1,451.5 1,451.5	0.0	\$129.19	\$270.00	\$20.00	2.1	1.9
5LED	156 Hallway	20			60	1.4	SW	3360 4368	4,838.4 5,241.6	16 20	T 32 R F 3 (ELE)	F43ILL/2 FU2LL	60	1.4	C-OCC	4368	3,386.9 5,241.6	1,451.5	0.0	\$129.19 \$0.00	\$270.00	\$20.00	2.1	#DIV/0!
5LED 35LED	Hallway 151	8	2T 32 R F 2 (u) (ELE) T 32 R F 3 (ELE)	FU2LL F43ILL/2	90	0.7	SW	3360	5,241.6 2,419.2	8	2T 32 R F 2 (u) (ELE) T 32 R F 3 (ELE)	F43ILL/2	90	0.7	C-OCC	2352	1,693.4	725.8	0.0	\$64.59	\$270.00	\$20.00	4.2	3.9
35LED 35LED	153 155	8 8	T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.7	SW	3360 3360	2,419.2 2,419.2	8 8	T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	90	0.7	C-OCC	2352	1,693.4	725.8 725.8	0.0	\$64.59	\$270.00	\$20.00	4.2	3.9
35LED	Conference Room 157	9	T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2	90	0.8	SW	2016	1,633.0	9	T 32 R F 3 (ELE)	F43ILL/2	90	0.8	C-OCC	1411.2	1,143.1	489.9	0.0	\$43.60	\$270.00	\$20.00	4.2 6.2	5.7
32LED 20LED	Library Office	35 4	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)	F42LL F41II I	60	2.1	SW	2688 3024	5,644.8 375.0	35	1T 32 R F 2 (ELE) S 28 P F 1 (ELE)	F42LL F41II I	60	2.1	0.000	2688 2116.8	5,644.8	0.0	0.0	\$0.00	\$270.00 \$270.00	\$20.00 \$20.00	27.0	#DIV/0! 25.0
35LED 5LED	Office	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	SW	3024	544.3	2	T 32 R F 3 (ELE)	F43ILL/2	90	0.2	C-OCC	2116.8	381.0	163.3	0.0	\$14.53	\$270.00	\$20.00	18.6	17.2 #DIV/0!
5LED	Hallway	10	T 32 R F 3 (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL	60	0.6	SW	4368	2,620.8	10	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60	0.6	C-OCC	4368		0.0 48.4	0.0	\$0.00	\$270.00	\$20.00	62.7	#DIV/0! 58.1
5LED 17	Storage Restroom	1	2T 32 R F 2 (u) (ELE) 2' 20 W F 1 (MAG)	FU2LL F21SS	60 28	0.0	SW	2688 2688	161.3 75.3	1	2' 20 W F 1 (MAG)	F21SS	28	0.1	C-000	1881.6 1881.6	112.9 52.7	48.4 22.6	0.0	\$2.01	\$270.00 \$270.00	\$20.00 \$20.00	62.7 134.4	58.1 124.4
5LED	Restroom	1	2T 17 R F 3 (ELE) S 28 P F 1 (ELE)	F23ILL F41ILL	47	0.0	SW	2688 2688	126.3	1	2T 17 R F 3 (ELE)	F23ILL F41ILL	47	0.0	C-OCC	1881.6	88.4	37.9	0.0	\$3.37	\$270.00	\$20.00	80.0 121.4	74.1 112.4
0LED 2LED	Restroom Restroom	1 2	1T 32 R F 2 (FLF)	F41ILL F42LL	31 60	0.0	SW	2688 2688	83.3 322.6	1 2	S 28 P F 1 (ELE) 1T 32 R F 2 (ELE)	F41ILL F42LL	31 60	0.0	0-000	1881.6 1881.6	58.3 225.8	25.0 96.8	0.0	\$2.22 \$8.61	\$270.00 \$270.00	\$20.00 \$20.00	121.4 31.4	112.4 29.0
2LED	132	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.5	SW	3360	1,612.8	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.5	C-OCC	2352	1,129.0	483.8	0.0	\$43.06	\$270.00	\$20.00	6.3	5.8
2LED	130 131	8	1T 32 R F 2 (ELE)	F42LL	60	0.5	SW	3360 3360	1,612.8	8	1T 32 R F 2 (ELE)	F42LL F42LL	60	0.5	0.000	2352	1,129.0	483.8 483.8	0.0	\$43.06 \$43.06	\$270.00	\$20.00 \$20.00	6.3	5.8
2LED 2LED	133	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.5	SW	3360	1,612.8 1,612.8	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.5	C-OCC	2352	1,129.0	483.8	0.0	\$43.06	\$270.00 \$270.00	\$20.00	6.3	5.8
2LED 2LED	135 137	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.5	SW	3360	1,612.8 1,612.8	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.5	C-OCC	2352	1,129.0	483.8		\$43.06	\$270.00	\$20.00	6.3 6.3	5.8
LED		8	1T 32 R F 2 (ELE)		60	0.5	SW	3360 3360		8		F42LL F42LL	60	0.5	0.000	2352	1,129.0 1.129.0	483.8 483.8	0.0	\$43.06 \$43.06	\$270.00 \$270.00	\$20.00 \$20.00	6.3	5.8
2LED	139 141	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	60	0.5	SW	3360	1,612.8 1,612.8	8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL	60	0.5	C-OCC	2352	1,129.0	483.8	0.0	\$43.06	\$270.00	\$20.00	6.3	5.8
LED	Hallway Hallway	16	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60	1.0	SW	4368 4368	4,193.3	16	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	60	1.0	C-00C	4368 4368	4,193.3 1,310.4	0.0		\$0.00 \$0.00	\$270.00 \$270.00	\$20.00 \$20.00		#DIV/0 #DIV/0
2LED	Exterior Lights	17	MH 100	MH100/1	128	2.2	Breaker	4032	1,310.4 8,773.6	17	MH 100	MH100/1	128	2.2	NONE	4032	8,773.6	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0
273 1LED	Exterior Lights	2	QL85/1 WP400MH1	QL85/1 MH400/1	85	0.2	Breaker	4032	685.4 3,693.3	2	QL85/1 WP400MH1	QL85/1 MH400/1	85	0.2	NONE NONE	4032 4032	685.4	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0
263	Exterior Lights Stadium Pole Lights	10	MH1000 Fixt	MH400/1 MH1000/1	1080	10.8	Breaker Breaker	4032	3,693.3 43,545.6	10		MH1000/1	458 1080	10.8	NONE	4032	43,545.6	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/0
263 263	Stadium Pole Lights	12	MH1000 Fixt MH1000 Fixt	MH1000/1	1080 1080	13.0	Breaker	4032	43,545.6 52,254.7	12	MH1000 Fixt MH1000 Fixt	MH1000/1	1080	13.0	NONE NONE	4032	52,254.7	0.0	0.0	\$0.00	\$0.00	\$0.00		#DIV/
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_				EXISTING COND	ITIONS					T	RETROFIT	CONDITIONS						COST & SAV	INGS ANALYSIS	NJ Smart Stari	t I Simple Payhael	
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control Annual Ho	urs Annual kWh	Number of Fixture	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	Lighting	With Out	Simple Payback
ld Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of	(Watts/Fixt) * (F No.)	Pre-inst. Estimated di control device hours for the	ily (kW/space) * (Annual Hours)		Lighting Fixture Code	Code from Table of Standard Fixture	Value from Table of	(Watts/Fixt) * (Number of	Retrofit control device	Estimated annual hours	(kW/space) * (Annual	(Original Annual kWh) - (Retrofit kW) - (Retrofit	(kWh Saved) * (\$/kWh)	Cost for renovations to	Prescriptive Lighting	Length of time for renovations	Length of time f
					Standard Fixture		usage group				Wattages	Standard Fixture	Fixtures)		for the usage group	Hours)	Annual kWh) Annual kW)		lighting system	Measures	cost to be recovered	be recovered
202 202	Ground Floor Main Entrance Main Entrance Vestibule	1	2T 17 R F 4 (ELE) 2T 17 R F 4 (ELE)	F24ILL F24ILL	6	1 0.1 1 0.1	SW SW		66 1 66 1 48 9	2T 17 R F 4 (ELE) 2T 17 R F 4 (ELE)	F24ILL F24ILL	61 61	0.1 0.1	C-OCC	4,368 4,368	266	- 0.0 - 0.0	\$ - \$ -	\$ 270.0 \$ 270.0	0 \$ 2	0	
5LED 0LED	Main Lobby Nurse Office	10	2T 17 R F 3 (ELE) T 32 R F 2 (ELE)	F23ILL F42LL	6	7 0.4 0 0.6	SW SW SW	3024 1,8	14 10	2T 25 R LED T 38 R LED	2RTLED RTLED38 2RTLED	25 38	0.2 0.4 0.1	C-OCC	4,368 2,117	983 804 159		\$ 84.12 \$ 97.84	\$ 2,632.5	0 \$ 27	0 24.9 0 26.9	19.3 24.1
SLED SLED 39	Nurse Office Copier Room Nurse Office Bath Room Nurse Office Storage	1 1	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE) 2' 17 W F 2 (ELE)	FU2LL FU2LL F22II I	6	0 0.1	SW SW	2688 1	44 3 61 1 89 1	2T 25 R LED 2T 25 R LED 2' 17 W F 2 (ELE)	2RTLED 2RTLED F22ILL	25 25 33	0.0	C-0CC	1,882	47 62	386   0.1 114   0.0	\$ 38.11 \$ 11.43 \$ 2.37	\$ 472.5	0 \$ 3	5 23.0 5 41.3 0 114.0	21.3 38.3 105.6
OLED OLED	Exam Room 1 Exam Room 2	1 1	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F22ILL F42LL F42LL	6	0 0.1 0 0.1	SW SW	3024 1	B1 1 B1 1	T 38 R LED T 38 R LED	RTLED38 RTLED38	38 38	0.0	C-OCC C-OCC	2,117	80 80	27   0.0 101   0.0 101   0.0	\$ 9.78 \$ 9.78	\$ 506.2	5 \$ 4	5 51.7 5 51.7	47.1 47.1
OLED SLED	Exam Room 3 Nurse Office Bath Room	1 2	T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42LL FU2LL	6	0 0.1 0 0.1	SW SW	3024 1	B1 1 23 2	T 38 R LED 2T 25 R LED	RTLED38 2RTLED	38 25	0.0 0.1	C-OCC	2,117 1,882	80 94	101 0.0 228 0.1	\$ 9.78 \$ 22.86	\$ \$ 506.2 6 \$ 675.0	5 \$ 4	5 51.7 0 29.5	47.1 27.3
15LED 32LED	Nurse Office Storage Stair to Nurse Room	1	S 32 C F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F44SE	6	0 0.1 0 0.1	SW SW	2688 3 2688 1	23 2 61 1	STLED4 STLED4	STLED4 STLED4	40 40	0.1	C-OCC	1,882 1,882	151 75	172 0.0 86 0.0	\$ 16.76 \$ 8.38	6 \$ 983.4 8 \$ 626.7	0 \$ 3	0 58.7 5 74.8	57.5 70.6
85LED 32LED	Storage next to the small stair to Nurse Room Restroom	1	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL	17:	2 0.3 0 0.1	SW SW	2688 9 2688 1		T 50 R LED STLED4	STLED4	50 40	0.1	C-OCC	1,882 1,882	188 75	737 0.2 86 0.0	\$ 74.36 \$ 8.38	8 \$ 626.7	0 \$ 3	0 10.0 5 74.8	9.0 70.6
OLED	Office Space Next to Nurse Office Small Office 1 Small Office 1 Small Office 1	2	T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.1	SW SW		26 4 63 2	T 38 R LED T 38 R LED	RTLED38 RTLED38 CFQ13/1-L	38 38 15	0.2 0.1	C-OCC	2,117	322 161	404 0.1 202 0.0	\$ 39.14 \$ 19.57	\$ 742.5	0 \$ 7	0 31.0 0 37.9	28.0 34.4 68.8
33 40LED 33	Small Office 1 Floor Lamp Small Office 2 Small Office 2	2	13 W CF 1 T 32 R F 2 (ELE) 13 W CF 1	CFQ13/1-L F42LL CFQ13/1-L	6	0 0.1	SW SW	3024 3	63 2 45 1	13 W CF 1 T 38 R LED 13 W CF 1	RTLED38 CFQ13/1-L	38 15	0.1	C-OCC	2,117	161	202 0.0 14 0.0	\$ 3.63 \$ 19.57 \$ 1.21	\$ 742.5 \$ 270.0	0 \$ 2 0 \$ 7 0 \$ 2	0 74.3 0 37.9 0 222.9	34.4 206.4
10LED 33	Small Office 3 Small Office 3	2 3	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	61	0 0.1 5 0.0	SW SW	3024 3	63 2 36 3	T 38 R LED 13 W CF 1	RTLED38 CFQ13/1-L	38 15	0.1	C-OCC	2,117	161 95	202 0.0 41 0.0	\$ 19.57 \$ 3.63	\$ 742.5	0 \$ 7	0 37.9 0 74.3	34.4 68.8
IOLED SSLED	Pathways Office Pathways Office	3	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	69	0 0.2 0 0.1	SW SW	3024 5 3024 2 3024 3	44 3 72 1	T 38 R LED T 59 R LED	RTLED38 RTLED38	38 38	0.1 0.0	C-OCC	2,117 2,117	241 80	303 0.1 192 0.1	\$ 29.35 \$ 18.94	\$ 978.7	5 \$ 9	5 33.3 5 26.7	30.1 24.4
SSLED	Pathways Small Office Pathways Small Office	2 2	T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	9	0 0.1	SW SW	3024 5	63 2 44 2	T 38 R LED T 59 R LED	RTLED38 RTLED38	38 38	0.1 0.1	C-OCC	2,117 2,117	161 161	202   0.0 383   0.1	\$ 19.57 \$ 37.88	\$ 742.5 3 \$ 742.5	0 \$ 7	0 37.9 0 19.6	34.4 17.8
85LED	Pathways Conference Room Hallway	6 8	T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F44SE	17:	0 0.4	SW SW	2016 7: 4368 6,0		T 38 R LED T 50 R LED	RTLED38 RTLED50 RTLED38	38 50	0.2	C-OCC	1,411 4,368			\$ 40.72 \$ 414.68	\$ 2,160.0	0 \$ 22	0 5.2	37.3 4.7
10LED	Instrumental Music Instrumental Music Office	2	T 32 R F 2 (ELE) T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL F42LL	6	0 0.2	SW SW	3024 3	06 4 63 2	T 38 R LED T 38 R LED T 38 R LED	RTLED38 RTLED38 RTLED38	38	0.2 0.1	C-OCC	2,352	358 161	449 0.1 202 0.0	\$ 43.13 \$ 19.57 \$ 17.57	\$ 742.5	0 \$ 7	0 28.2 0 37.9	25.4 34.4
10LED 10LED	Instrumental Music Storage R24 Restroom	8 2	T 32 R F 2 (ELE) T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL F42LL	6	0 0.5 0 0.1	SW SW SW	3360 1,6 2688 3	23 2 13 8 23 2	T 38 R LED T 38 R LED	RTLED38 RTLED38 RTLED38	38 38 38	0.1 0.3 0.1	C-OCC	2,352	715 143	180   0.0 898   0.2 180   0.0	\$ 86.26 \$ 17.57		0 \$ 22	0 42.3 0 25.0 0 42.3	22.5 38.3
33 ISLED	Closet Cafeteria	1 80	13 W CF 1	CFQ13/1-L F42LL	1:	5 0.0 0 4.8	SW SW	2688 12,9	40 1	13 W CF 1	CFQ13/1-L STLED4	15 40	0.0	C-OCC C-OCC	1,882 1,882 2,688	28	12 0.0 4,301 1.6	\$ 1.08 \$ 440.56	\$ 270.0	0 \$ 2	0 42.3 0 250.8 0 65.4	232.2 65.3
B5LED B5LED	Kitchen Kitchen Office	13	S 32 C F 2 (ELE) T 32 R F 3 (ELE) T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	91	0 1.2 0 0.4	SW SW	2688 3,1 3024 1,0	45 13 89 4	STLED4 T 59 R LED T 59 R LED	RTLED38 RTLED38	38	0.5 0.2	C-OCC	2,688 2,117		1,817 0.7 767 0.2	\$ 186.14 \$ 75.77	\$ 3,341.2 ' \$ 1,215.0	5 \$ 34 0 \$ 12	5 18.0 0 16.0	16.1 14.5
5LED 5LED	Restroom Closet	1 1	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL	6	0 0.1 0 0.1	SW SW	2688 1 2688 1	61 1 61 1	2T 25 R LED 2T 25 R LED	2RTLED 2RTLED	25 25	0.0	C-OCC	1,882 1,882	47 47	114 0.0 114 0.0	\$ 11.43 \$ 11.43	3 \$ 472.5 3 \$ 472.5	0 \$ 3	5 41.3 5 41.3	38.3 38.3
121 3 35LED	Back Closet Back Closet	1 1	W 34 P F 4 W 34 W F 1 (MAG)	F44EE F41EE	14	4 0.1 3 0.0	SW SW	2688 1	87 1 16 1	W 28 P F 4 W 28 W F 1 T 59 R LED	F44SSILL F41SSILL RTI FD38	96 26	0.1 0.0	C-OCC	1,882 1,882	181 49	206 0.0 67 0.0	\$ 20.11 \$ 6.55	\$ 459.0	0 \$ 2	0 20.5 0 70.1	19.5 67.1
32LED	Dishwash Room Dishwash Room Dishwash Room	1 1	T 32 R F 3 (ELE) 1T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F43ILL/2 F42LL	6	0 0.3 0 0.1 0 0.1	SW SW SW	2688 1	26 3 61 1 61 1	STLED4 2T 25 R LED	STLED38 STLED4 2RTLED	38 40	0.1	C-OCC	2,688 2,688 2,688	108		\$ 42.95 \$ 5.51	\$ 626.7	0 \$ 3	5 22.8 5 113.8 5 49.0	20.6 107.4 45.4
SLED SSLED	Dishwash Room Stair Stair	2	S 28 P F 1 (ELE) T 32 R F 3 (ELE)	FU2LL F41ILL F43ILL/2	3	0 0.1	SW SW		71 2	4 ft LED Tube T 59 R LED	200732x1 RTI FD38	25 15 38	0.0	C-0CC	4,368 4,368	131	140 0.0 227 0.1	\$ 9.64 \$ 13.60 \$ 22.09	\$ 560.4	0 \$ 5	0 41.2 5 22.9	37.5 20.9
S5LED S1LED	Hallway Hallway	1 3	T 32 R F 3 (ELE)	F43ILL/2 F43EE	9	0 0.1	SW SW	4368 3	93 1 07 3	T 59 R LED T 38 R LED	RTLED38 RTLED38	38 38	0.0	C-OCC	4,368 4,368	166	227 0.1 1,009 0.2	\$ 22.09 \$ 98.15	\$ 506.2	5 \$ 4	5 22.9 5 10.0	20.9
30 5LED	Auditorium Auditorium	14	1 B 96 C F 2 (MAG) 2T 32 R F 2 (u) (ELE)	F82EHS FU2LL	22	7 3.2 0 0.5	SW SW	2688 8,5 2688 1,2	42 14	T 28 R F 4 2T 25 R LED	F44SSILL 2RTLED	96 25	1.3	C-OCC	2,688 2,688	3,613		\$ 505.00 \$ 77.10	) \$ 4,050.0 0 \$ 1,890.0	0 \$ 2	0 8.0 0 24.5	8.0 22.7
32LED 32LED	Hallway Boiler Room	8 11	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.5 0 0.7	SW SW	4368 2,0 8736 5,7	97 8 66 11	STLED4 STLED4	STLED4 STLED4	40 40	0.3 0.4	C-OCC	4,368 8,736	3,844		\$ 67.98 \$ 179.00	\$ 4,193.7	0 \$ 18	0 45.9 5 23.4	43.9 22.4
46LED 32LED	Boiler Room Office	6	W 32 P F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	51	9 0.1 0 0.4	SW SW	3024 1,0	15 1 89 6	4 ft LED Tube STLED4	200732x2 STLED4	30 40	0.0	C-OCC	8,736 2,117	508		\$ 23.60 \$ 56.01	\$ 2,410.2	0 \$ 11	5 18.4 0 43.0	16.9 41.1
32LED 35LED 32LED	Office Athelic Director Room 4	4	T 32 R F 2 (ELE) T 32 R F 3 (ELE) 1T 32 R F 2 (ELE)	F42LL F43ILL/2 F42LL	9	0 0.4 0 0.4 0 0.8	SW SW SW	3024 1,0 3024 1,0 3024 2,3	89 4	T 59 R LED	STLED4 RTLED38 STLED4	40 38	0.2 0.2	C-OCC	2,117	508 322 1.101	767 0.2	\$ 56.01 \$ 75.77	\$ 1,215.0	0 \$ 12	0 16.0	41.1 14.5
85LED 85LED	Room 6 Office	12	T 40 R F 4 (ELE)  1T 32 R F 2 (ELE)	F42LL F44SE F42LL	173	2 2.1	C-OCC SW	3024 6,2	42 12 81 1	STLED4 T 50 R LED STLED4	RTLED50 STLED4	50 40	0.6	NONE C-OCC	3,024		1,258 0.3 4,427 1.5 97 0.0	\$ 121.35 \$ 446.89 \$ 9.33	\$ 2,835.0	0 \$ 30	5 40.4 0 6.3 5 67.1	5.7 63.4
B5LED B5LED	Apt Classroom 10 Apt Classroom 10	6	T 32 R F 3 (ELE)	F43ILL/2 F43ILL/2	91	0 0.5 0 0.5	SW SW	3360 1,8 3360 1,8	14 6	T 59 R LED T 59 R LED	RTLED38 RTLED38	38 38	0.2	C-OCC C-OCC	2,352 2,352	536 536	1,278 0.3	\$ 125.02 \$ 125.02	\$ 1,687.5	0 \$ 17	0 13.5	12.1
32LED 32LED	Closet Girls Restroom 1st Floor Room129	1 2	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.1 0 0.1	SW SW	2688 1		STLED4 STLED4	STLED4 STLED4	40 40	0.0 0.1	C-OCC	1,882 1,882	75 151	86 0.0 172 0.0	\$ 8.38 \$ 16.76	\$ 626.7	0 \$ 3	5 74.8 0 58.7	70.6 55.7
32LED 32LED	Room 127	12 8	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.7	SW SW	3360 2,4 3360 1,6	19 12 13 8	STLED4 STLED4	STLED4 STLED4	40 40	0.5 0.3	C-OCC	2,352 2,352	1,129 753	1,290 0.2 860 0.2	\$ 123.50 \$ 82.33	3 \$ 4,550.4 3 \$ 3,123.6	0 \$ 20	0 37.9	35.2 36.2
32LED 35LED	Room 127 Office	3	1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	9	0 0.1 0 0.3	SW SW	3360 4 3024 8	16 3	STLED4 T 59 R LED	STLED4 RTLED38	40 38	0.1 0.1	C-OCC	2,352 2,117	188 241	215 0.0 575 0.2	\$ 20.58 \$ 56.82	8 \$ 983.4 2 \$ 978.7		0 47.8 5 17.2	45.3 15.6
32LED 32LED 85LED	125 123 Restroom	14	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F42LL F44SE	6	0 0.8	SW SW SW	3360 2,8 3360 2,8		STLED4 STLED4 T 50 R LED	STLED4 STLED4 RTLED50	40 40 50	0.6 0.6	C-OCC	2,352	1,317 1,317 188	1,505   0.3 1,505   0.3 737   0.2	\$ 144.08 \$ 144.08 \$ 74.36	\$ 5,263.8	0 \$ 23	0 36.5 0 36.5 0 10.0	34.9 34.9 9.0
S5LED 20LED	Book Storage Restroom	4	T 32 R F 3 (ELE) S 28 P F 1 (FLF)	F43ILL/2 F41II I	91	2 0.3 0 0.4 1 0.1	SW SW	2688 9	25 2 68 4 67 2	T 59 R LED 4 ft LED Tube	RTLED38 200732x1	38	0.2	C-0CC	1,882	286	682 0.2	\$ 68.18 \$ 10.96	\$ 1,215.0	0 \$ 12	0 17.8	16.1 46.6
32LED 32LED	124A 124B	16	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	6	0 1.0	SW SW	2688 1: 3360 3,2 3360 1,2	26 16	STLED4 STLED4	STLED4 STLED4	15 40 40	0.6 0.2	C-OCC C-OCC	2,352 2,352	56 1,505 564	110 0.0 1,720 0.3 645 0.1	\$ 164.67 \$ 61.75	\$ 5,977.2	0 \$ 26	0 36.3	34.7 37.3
85LED 32LED	126 128	6 8	T 40 R F 4 (ELE) 1T 32 R F 2 (ELE)	F44SE F42LL	177	2 1.0 0 0.5	SW SW	3360 3,4 3360 1,6	68 6	T 50 R LED STLED4	RTLED50 STLED4	50 40	0.3 0.3	C-OCC	2,352 2,352	706 753	645 0.1 2,762 0.7 860 0.2	\$ 272.25 \$ 82.33	\$ 1,687.5	0 \$ 17	0 6.2 0 37.9	5.6 36.2
33	128 Restroom	4	T 32 R F 2 (ELE) 13 W CF 1	F42LL CFQ13/1-L	6	0 0.2 5 0.0	SW SW	2688	06 4 40 1	T 38 R LED 13 W CF 1	RTLED38 CFQ13/1-L	38 15	0.2 0.0	C-OCC	2,352 1,882	358 28	449 0.1 12 0.0	\$ 43.13 \$ 1.08	3 \$ 1,215.0 3 \$ 270.0	0 \$ 12	0 28.2 0 250.8	25.4 232.2
85LED	storage 112 110	6	S 28 P F 1 (ELE) T 40 R F 4 (ELE) T 40 R F 4 (ELE)	F41ILL F44SE F44SE	17:	1 0.0 2 1.0 2 1.0	C-OCC C-OCC	3360 3,4	83 1 68 6	4 ft LED Tube T 50 R LED	200732x1 RTLED50	15 50	0.0	NONE	1,882 3,360	1,008	2,460 0.7	\$ 5.48 \$ 245.34	\$ 1,417.5	0 \$ 15	5 75.7 0 5.8	69.4 5.2
85LED 85LED 40LED	108	6	T 40 R F 4 (ELE) T 40 R F 4 (ELE) T 32 R F 2 (ELE)	F44SE F44SE F42LL	17:	2 1.0	C-OCC	3360 3,4	68 6 68 6	T 50 R LED T 50 R LED T 38 R LED	RTLED50	50 50	0.3	NONE NONE	3,360	1,008	2,460 0.7	\$ 245.34 \$ 245.34	\$ 1,417.5	0 \$ 15		5.2
5LED 40LED	Hallway Hallway Hallway	20 5	2T 32 R F 2 (u) (ELE) T 32 R F 2 (ELE)	FU2LL F42LL	6	0 1.2 0 0.3	SW SW	4368 1,3 4368 5,2 4368 1,3	42 20	2T 25 R LED T 38 R LED	2RTLED RTLED38	50 38 25 38 50	0.5 0.2	C-OCC	4,368 4,368 4,368	2,184	3,058 0.7	\$ 46.74 \$ 297.41 \$ 46.74	\$ 4,320.0 \$ 1,451.2	0 \$ 32	0 14.5 5 31.1	13.4 27.9
35LED 35LED	106 Office	6 3	T 40 R F 4 (ELE) T 40 R F 4 (ELE)	F44SE F44SE	17:	2 1.0 2 0.5	SW SW	3360 3,4 3024 1,5	68 6 60 3	T 50 R LED T 50 R LED	RTLED50 RTLED50		0.3	C-OCC	2,352 2,117	706 318	1,243 0.4	\$ 272.25 \$ 123.83	5 \$ 1,687.5 3 \$ 978.7	0 \$ 17		5.6 7.1
OLED SLED	Principle Office Main Office	3 12	T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42LL FU2LL	6	0 0.2 0 0.7	SW SW	3024 5 3024 2,1	44 3 77 12	T 38 R LED 2T 25 R LED	RTLED38 2RTLED RTLED50	38 25 50 25 25	0.1 0.3	C-OCC	2,117 2,117	241 635	303 0.1 1,542 0.4	\$ 29.35 \$ 152.43	\$ 978.7 3 \$ 2,700.0	5 \$ 9 0 \$ 20	5 33.3 0 17.7	30.1 16.4
5LED	Hallway Guidance Office	7	T 40 R F 4 (ELE)  2T 32 R F 2 (u) (ELE)	F44SE FU2LL FU2LL	172	2 1.2 0 0.2	SW SW	4368 5,2 3024 7. 3024 7.	59 7 26 4 26 4	T 50 R LED 2T 25 R LED 2T 25 R LED	2RTLED 2RTLED 2RTLED	50 25	0.4 0.1	C-OCC	4,368 2,117	212	514 0.1	\$ 362.84 \$ 50.81	\$ 1,923.7 \$ 1,080.0	5 \$ 19 0 \$ 8	5 5.3 0 21.3	4.8 19.7
LED	Guidance Office Guidance Office Cuidance Office	6	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL	6	0 0.2 0 0.4 0 0.1	SW SW SW	3024 1,0	89 6	2T 25 R LED 2T 25 R LED 2T 25 R LED	2RTLED 2RTLED 2RTLED	25 25	0.1 0.2	C-OCC	2,117	212 318	771 0.2	\$ 50.81 \$ 76.21	\$ 1,485.0	0 \$ 11	0 21.3 0 19.5	19.7 18.0
LED	Guidance Office Guidance Office Guidance Office	4 3	2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE) 2T 32 R F 2 (u) (ELE)	FU2LL FU2LL FU2LL	6	0 0.1	SW SW	3024 7	63 2 26 4	2T 25 R LED	2RTLED	25 25 25 25	0.1 0.1 0.1	C-0CC	2,117	106 212 159	514 0.1	\$ 25.40 \$ 50.81	\$ 1,080.0	0 \$ 8	0 26.6 0 21.3	24.6 19.7
SLED SLED 2LED	Guidance Office  Spec Ed 109	3 8	2T 32 R F 2 (u) (ELE) 1T 32 R F 2 (FLF)	FU2LL F42LL	6	0 0.2 0 0.5	SW SW	3024 5 3360 1,6	44 3 44 3 13 8	2T 25 R LED 2T 25 R LED STLED4	2RTLED 2RTLED STLED4	25 25 40	0.1 0.3	C-OCC	2,117	159 159 753	386   0.1 860   0.2	\$ 38.11 \$ 38.11 \$ 82.33	\$ 877.5	0 \$ 6	5 23.0 5 23.0 0 37.9	21.3 21.3 36.2
LED	109 Small Office 111	8 10	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.5 0 0.6	SW	3360 1,6 3360 2,0	13 8 16 10	STLED4 STLED4 STLED4 STLED4	STLED4 STLED4 STLED4	40 40	0.3 0.4	C-OCC C-OCC	2,352 2,352	753 753 941 941	860 0.2 1,075 0.2	\$ 82.33 \$ 102.92	3 \$ 3,123.6 2 \$ 3,837.0	0 \$ 14	0 37.9 0 37.9 0 37.3	36.2 35.6
5LED	113 Hallway	10 20	1T 32 R F 2 (ELE) 2T 32 R F 2 (u) (ELE)	F42LL FU2LL F42LL	6	0 0.6 0 1.2	SW SW SW	3360 2,0 4368 5,2	16 10 42 20	2T 25 R LED	STLED4 2RTLED	40 40 40 25	0.4 0.5	C-OCC	2,352 4,368	2,184	3,058 0.7	\$ 102.92 \$ 297.41	\$ 3,837.0 \$ 4,320.0	0 \$ 17	0 37.3 0 14.5	35.6 13.4
0LED 2LED	115 117	8 14	T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL F42LL	6	0 0.5 0 0.8 0 0.2	SW SW SW	3360 1,6	13 8	T 38 R LED STLED4	RTLED38 STLED4	38	0.3 0.6	C-OCC	2,352 2,352	715 1,317	898 0.2 1,505 0.3	\$ 86.26 \$ 144.08	\$ 5,263.8	0 \$ 22 0 \$ 23	0 25.0 0 36.5	22.5 34.9
LED	Hallway 2nd Floor Room 229	22	1T 32 R F 2 (ELE)	F42LL	6	0 0.2	SW	3360 4,4		T 38 R LED STLED4	STLED4	40 38 40 40	0.2 0.9	C-OCC	4,368 2,352	2,070	384 0.1 2,365 0.4	\$ 37.39 \$ 226.42	9 \$ 1,215.0 2 \$ 8,117.4	0 \$ 12 0 \$ 35	0 32.5 0 35.9	29.3 34.3
2LED 2LED 2LED	227 225 223	12	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE)	F42LL F42LL F42LL	61	0 0.7 0 0.7 0 0.7	SW SW SW	3360 2,4 3360 2,4 3360 2,4	19 12	STLED4 STLED4 STLED4	STLED4 STLED4 STLED4	40 40 40	0.5 0.5 0.5	C-0CC	2,352 2,352 2,352	1,129 1,129 1,129	1,290 0.2 1,290 0.2 1,290 0.2	\$ 123.50 \$ 123.50 \$ 123.50	\$ 4,550.4	0 \$ 20	0 36.8 0 36.8 0 36.8	35.2 35.2 35.2
SLED SLED	Restroom Hallway	2 40	T 32 R F 3 (ELE) T 40 R F 4 (ELE)	F42LL F43ILL/2 F44SE	9	0 0.7 0 0.2 2 6.9	SW	2688 4	84 2	T 59 R LED T 50 R LED	RTLED38 RTLED50	38 50	0.5 0.1 2.0	C-00C	1,882 4,368	143	341 0.1	\$ 123.50 \$ 34.09 \$ 2,073.38	\$ 742.5	0 \$ 7	0 21.8	19.7 4.2
B2LED B5LED	Storage Restroom	1 2	1T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F42LL F43ILL/2	60	0 0.1 0 0.2	SW SW SW	2688 1	61 1 84 2	STLED4 T 59 R LED	STLED4 RTLED38	40 38	0.0 0.1	C-OCC	1,882 1,882	75 143	86 0.0	\$ 2,073.38 \$ 8.38 \$ 34.09	\$ 626.7	0 \$ 3	5 74.8 0 21.8	70.6 19.7
2LED 2LED	224 226	12	1T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.7 0 1.0	SW SW	3360 2,4 3360 3,2	19 12 26 16	STLED4 STLED4	STLED4 STLED4	40 40	0.5 0.6	C-OCC	2,352 2,352	1,129 1,505	1,290 0.2 1,720 0.3	\$ 123.50 \$ 164.67	\$ 4,550.4 \$ 5,977.2	0 \$ 20 0 \$ 26	0 36.8 0 36.3	35.2 34.7
S2LED 85LED	228 Hallway	16 5	1T 32 R F 2 (ELE) 1T 32 R F 2 (ELE) T 40 R F 4 (ELE)	F42LL F44SE	17:	0 1.0 2 0.9	SW SW	3360 3,2 4368 3,7	26 16 56 5	T 50 R LED	STLED4 RTLED50	40 40 40 50 38	0.6 0.3	C-OCC	2,352 4,368	1,505 1,092	1,720 0.3 2,664 0.6	\$ 164.67 \$ 259.17	5,977.2 1,451.2	0 \$ 26 5 \$ 14	0 36.3 5 5.6	34.7 5.0
IOLED	212 Office	6 2	T 32 R F 2 (ELE) T 32 R F 2 (ELE)	F42LL F42LL	6	0 0.4	SW SW	3360 1,2 3024 3	10 6 63 2	T 38 R LED T 38 R LED	RTLED38 RTLED38		0.2 0.1	C-OCC	2,352 2,117	536 161	673 0.1 202 0.0	\$ 64.70 \$ 19.57	) \$ 1,687.5 7 \$ 742.5	0 \$ 17	0 26.1 0 37.9	23.5 34.4
85LED IOLED ISLED	Faculty Hallway	5	T 40 R F 4 (ELE) T 32 R F 2 (ELE) T 32 R F 3 (ELE)	F44SE F42LL F43ILL/2	173	2 0.3 0 0.3	SW SW	4368 1,3	40 2 10 5	T 50 R LED T 38 R LED T 59 R LED	RTLEDS0 RTLEDS0 RTLED38 RTLED50 RTLED50 RTLED50 RTLED50 RTLED50	50 38	0.1 0.2	C-OCC	2,117 4,368	212 830	829 0.2	\$ 82.56 \$ 46.74 \$ 437.58	\$ 742.5 \$ 1,451.2	5 \$ 14	0 9.0 5 31.1	8.1 27.9
85LED 85LED 85LED	Vocal Music 208	6	T 32 R F 3 (ELE) T 40 R F 4 (ELE) T 40 R F 4 (ELE)	F43ILL/2 F44SE F44SE	17:	0 1.9 2 1.0	SW SW	3360 6,3 3360 3,4	68	T 59 R LED T 50 R LED T 50 R LED	RTLED38 RTLED50	38 50	0.8 0.3	C-OCC	2,352 2,352	1,877 706		\$ 272.25	5 \$ 1,687.5	0 \$ 17	5 12.0 0 6.2	10.7 5.6
LED	206 204	6	T 32 R F 2 (ELE)	F44SE F42LL	1/3	2 1.0 0 0.4	SW SW	3360 3,4 3360 1,2	10 6	T 38 R LED	RTLED38	38	0.3 0.2	C-OCC	2,352	706 536	673 0.1	\$ 272.25 \$ 64.70	5 \$ 1,687.5 0 \$ 1,687.5	0 \$ 17	0 6.2 0 26.1	5.6 23.5

Area Description   No. of Fixtures   Lighting Fixture Code	Fixture Code	Fixtu	of No.) ard	SW   SW   SW   SW   SW   SW   SW   SW	Annual Hours  Estimated daily (A/	(W/space) * No	6 T 38 5 T 38 4 T 78 6 T 78 7 T 4 ft 1 10 T 78 34 T 78 34 T 78 34 T 78 34 T 78 35 T 78 36 T 78 36 T 78 37 T 78 38 T 78 39 T 78 30 T 78 4 T 8 30 T 78 30 T 78 30 T 78 4 T 8 30 T 78 4 T 8 30 T 8 4 T 8 5	8 R LED 9 R LED 100 R	Fixture Code  Code from Table of Standard Fixture  Wattages  RTLED38  STLED4  STLED5  STLED4  STLED5  STLED4  STLED5  STLED5  STLED5  STLED5  STLED6  STLED6  STLED6  STLED6  STLED7  STLED7  STLED7  STLED7  STLED8	Watts per Fixture Value from Table of Standard Fixture Wattanax  \$ 38	WWSpace   WattsFixt   ** (Number of Fixtures)	Retrofit control Estima device annua	ated (kW/s; (Annur usage) (kW/s; (Annur usage) (Annur ky	S36	Annual MV Save used to the control of the control o	\$ 64.70 \$ 64.70 \$ 64.70 \$ 59.91 \$ 43.33 \$ 64.70 \$ 47.59 \$ 47.59 \$ 107.83 \$	\$ 1,687.50 \$ 1,451.25 \$ 1,215.00 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 2,632.50 \$ 2,632.50 \$ 1,215.00 \$ 1,215.00	\$ 170 \$ 145 \$ 120 \$ 170 \$ 170 \$ 170 \$ 170 \$ 120 \$ 170 \$ 120 \$ 270 \$ 120 \$ 270 \$ 120 \$ 280 \$ 280 \$ 280 \$ 320 \$	26.1 26.9 28.2 26.1 26.1 27.0 24.4 13.7 35.4 26.1 35.2 35.2 10.0 18.0 286.0 14.5 36.8
202	Code from Table of Standard Fixture Wattages  F42(1	d Value fro Table of Standard	Watts/Fixt  '(F   No.)   watts/Fixt  '(F   N	Int Pre-inst. control device  SW	Estimated daily (kt (Ar	1.210 1.210	0. of fixtures after Lighter retrofit  6	### RED  ###	Code from Table of Standard Fixture Wattages  RTLED38  STLED4  RTLED38  RTLED4  STLED4	Value from Table of Standard Fixture Wattanes. 38 38 38 38 38 38 38 38 38 38 38 38 38	(WatsFixt) * (Wats	Retrofit control Estimated device annual for the	ated (kW/sr (Annur (Anu	Ciriginal Annual Wh) - (Retrof Annual Wh) - (Retr	ala (Virginal Annual III)  673 0.1 673 0.1 674 0.1 675	(kWh Saved) * (\$7kWh)	Cost for removations to lighting system  \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,687.50 \$ \$ 1,215.00 \$ \$ 1,687.50 \$ \$ 1,215.00 \$ \$ 1,687.50 \$ \$ 1,215.00 \$ \$ 1,687.50 \$ \$ 1	Prescriptive Lightling Measures  \$\$ 170 \$\$ 170 \$\$ 170 \$\$ 1445 \$\$ 170 \$\$	Length of time for renovations coat to be recovered  28.1  28.1  28.9  28.2  28.2  28.1  35.2  35.2  35.2  35.2  35.2  35.2  35.2  35.1  35.2  35.1  35.2  35.2  35.2  35.2  35.1  35.2  36.8  3
202   6	Fixture Wattages  F42LL F43LL	Table of Standard	No.	SW   SW   SW   SW   SW   SW   SW   SW	Nours for the usage group  3360 3360 3360 3360 3360 3360 3360 33	1,210 1,210 1,210 1,210 1,210 1,210 1,008 806 1,210 1,210 1,210 2,016 2,016 2,016 1,210 1,028 1,027 1,	6 T38 6 T38 6 T38 6 T38 5 T38 6 T38 6 T38 6 T38 6 T38 7 4 tht 10 T38 10 T38 10 T38 11 T59 11 T59 12 T22 12 T50 13 T59 14 T59 15 T58 16 T38 17 T59 18 T58 19 T58 19 T58 10	8 R LED 9 R LED 100 R	Standard Fixture Wattages  RTLED38 RTLED4 RTLED38 RTLED4 RTLED38 20073247 FAGGHL STLED4 STLED5 STLED4 STLED4 STLED4 STLED4 STLED4 STLED5 STLED4 STLED4 STLED5 STLED4 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED5 STLED6 STLE	Table of Standard Fixture Wattanes. 38 38 38 38 38 38 38 38 38 38 38 38 38	(Number of Fixtures)  0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.1 0.4 0.4 0.4 0.4 0.2 1.4 0.5 0.0 0.5 0.5 0.0 0.5 0.7 0.1 0.1 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	device annua for the	hours   (Annu hours)	Sas	the way - (Retrofit Annual kW)  673 0.1  675 0.2  675 0.1  675 0.0	\$ 64.70 \$ 64.70 \$ 64.70 \$ 59.91 \$ 43.33 \$ 64.70 \$ 47.59 \$ 47.59 \$ 107.83 \$	renovations to lightling system  \$ 1,887.50	Lighting   Measures     \$ 170   \$ 17	tor renovations cost to be recovered  26.1  26.1  26.1  26.9  28.2  26.1  27.0  24.4  24.4  24.4  24.4  25.1  35.2  10.0  14.5  35.2  10.0  14.5  36.8  36.8  13.9  75.7  75.7  67.5  88.9  45.4  52.7
202 6 T 32 R F 2 (ELE) 203 6 T 32 R F 2 (ELE) 203 6 T 32 R F 2 (ELE) 207 4 T 32 R F 2 (ELE) 207 7 T S 20 F F 1 (ELE) 210 1 T 32 R F 2 (ELE) 211 1 T T T T T T T T T T T T T T T T T	F42LL F43LL2 F43LL3 F4	Standard	60 0 0.4 60 0.4 60 0.4 60 0.3 60 0.2 60 0.4 60 0.2 60 0.4 60 0.4 60 0.6 60 0.6 60 0.6 60 0.6 70 0.6 71 0.7 72 0.0 73 1 0.1 77 0.0 74 0.0 75 0.	SW S	Usage group	1,210 1,210 1,208 806 1,210 1,210 1,210 1,210 1,210 1,210 1,210 1,210 1,210 1,210 1,572 1,	6 T 38 6 T 38 6 T 38 6 T 38 4 T 38 4 T 38 6 T 38 7 4 Ht 1 10 T 38 34 ST 12 25 ST 12 2 T 50 11 2 T 27 22 24 ST 12 24 ST 12 25 T 50 27 T 20 24 ST 14 2 T 50 2	8 R LED  10 R	### Wattages  ### RTLED38  ###	Standard Fixture Wattanes 38 38 38 38 38 38 38 38 38 38 38 38 38	0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.4   0.4   0.2   1.4   0.5	for the	2,352 2,352	Annual KWh)  536  536  536  447  358  536  536  536  536  536  536  439  894  1.  664  3.199  3.536  4.224  4.  188  1.328  1.  67  2.184  3.  2.194  1.  28  1.  28  1.  28  1.  29  1.  28  1.  28  1.  29  1.  28  1.  28  1.  28  1.  29  1.  28  1.  28  1.  28  1.  28  1.  28  1.  28  1.  28  1.  29  1.  20  20  20  20  20  20  20  20  20  2	Annual kW)  673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   673   0.1   675   0.1   676   0.2   676   0.2   677   0.1   678   0.7   679   0.1   679   0.1   670   0.0   670	\$ 64.70 \$ 64.70 \$ 59.41 \$ 43.13 \$ 64.70 \$ 64.70 \$ 64.70 \$ 107.83 \$	\$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,888.50 \$ 1,888.50	S   170	cost to be recovered  26.1  26.1  26.1  26.1  26.9  28.9  28.2  26.1  27.0  24.4  24.4  13.7  35.4  26.1  35.2  10.0  18.0  18.0  18.0  19.5  19
203 6 T 32 R F 2 (ELE) 206 5 T 32 R F 2 (ELE) 207 4 T 32 R F 2 (ELE) 209 6 T 32 R F 2 (ELE) 209 6 T 32 R F 2 (ELE) 211 6 T 32 R F 2 (ELE) 211 6 T 32 R F 2 (ELE) 211 7 S 28 P F 1 (ELE) 215 10 T 32 R F 2 (ELE) 216 10 T 32 R F 2 (ELE) 217 10 T 32 R F 2 (ELE) 218 10 T 32 R F 2 (ELE) 219 10 T 32 R F 2 (ELE) 219 10 T 32 R F 2 (ELE) 210 T 32 R F 2 (ELE) 210 T 32 R F 2 (ELE) 211 T 32 R F 2 (ELE) 212 T 32 R F 2 (ELE) 213 T 32 R F 3 (ELE) 214 T 32 R F 2 (ELE) 215 T 32 R F 2 (ELE) 216 T 32 R F 2 (ELE) 217 T 32 R F 2 (ELE) 218 T 32 R F 2 (ELE) 219 T 32 R F 2 (ELE) 219 T 32 R F 2 (ELE) 220 T 32 R F 2 (ELE) 230 T 32 R F 2 (ELE) 240 T 32 R F 2 (ELE) 250 T 32 R F 2 (E	F421L F431L12 F431L12 F431L12 F431L12 F431L14 F431L14 F431L14 F431L15 F431L15 F431L16 F431L16 F431L16 F431L16 F431L16 F431L17 F431L16 F431L17 F431L17 F431L18		60 0.4 60 0.4 60 0.4 60 0.3 60 0.2 60 0.4 31 0.2 60 0.6 60 0.6 60 0.6 60 0.6 60 0.6 60 0.7 172 0.3 10 0.2 172 0.3 11 0.0 12 0.0 11 0.0	SW S	3360 3360 3360 3360 3360 3360 3360 3360	1,008 806 1,210 948 2,016 2,016 2,016 1,572 1,57	6 T 38 5 T 38 4 T 78 6 T 78 7 T 4 ft 1 10 T 78 34 T 78 34 T 78 34 T 78 34 T 78 35 T 78 36 T 78 36 T 78 37 T 78 38 T 78 39 T 78 30 T 78 4 T 8 30 T 78 30 T 78 30 T 78 4 T 8 30 T 78 4 T 8 30 T 8 4 T 8 5	8 R LED  10 R	RTLED38 RTLED4 STLED4 STLED58 STLED4 STLED58 STLED4 STLED4 STLED58 STLED4 STLED58 STLED4 STLED58	Fixture Wattraes 38 38 38 38 38 38 38 38 38 38 38 40 38 40 40 40 40 40 40 40 40 40 40 40 40 40	02 02 02 02 02 02 02 01 04 04 02 14 02 21 15 05 05 05 05 05 05 07 07		2,352 2,352 2,352 2,352 2,352 2,352 2,352 2,352 4,368 2,352	536 536 536 447 358 536 536 536 536 536 459 894 1, 894 1, 894 1, 894 1, 183 1, 199 3, 199 3, 199 3, 199 3, 199 3, 199 1, 199 1, 199 1, 199 1, 199 1, 199 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	673 0.1 673 0.1 673 0.1 673 0.1 581 0.1 581 0.1 581 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 673 0.1 689 0.7 673 0.1 699 0.2 686 0.7 673 0.1 699 0.2 686 0.7 673 0.1 699 0.2 686 0.7 673 0.1 699 0.2 686 0.7 689 0.7 689 0.7 689 0.7 689 0.7 699 0.2 699 0.2 699 0.2 699 0.2 699 0.2 699 0.3 699 0.	\$ 64.70 \$ 53.91 \$ 43.13 \$ 64.70 \$ 64.70 \$ 47.53 \$ 107.83 \$ 107.83 \$ 107.83 \$ 83.37 \$ 469.30 \$ 467.0 \$ 369.7 \$ 469.2 \$ 555.7 \$ 297.41 \$ 125.50 \$ 122.50 \$ 107.83 \$ 107	\$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 1,1687.50 \$ 1,268.40 \$ 1,268.40 \$ 2,632.50 \$ 2,632.50 \$ 2,632.50 \$ 2,632.50 \$ 1,287.80 \$ 1,287.80 \$ 1,287.80 \$ 2,632.50 \$ 2,632.50 \$ 1,287.80 \$ 1,287.80	\$ 170 \$ 170 \$ 145 \$ 145 \$ 125 \$ 120 \$ 170 \$ 125 \$ 125 \$ 270 \$ 270 \$ 320 \$	recovered  26.1 26.1 26.9 28.2 26.1 26.1 26.1 27.0 28.4 24.4 24.4 24.4 25.1 35.2 10.0 266.0 266.0 27.0 35.4 35.2 10.0 266.0 35.8 35.8 35.8 35.8 35.8 35.8 35.8 35.8
203 6 T 32 R F 2 (ELE) 207 4 T 32 R F 2 (ELE) 207 4 T 32 R F 2 (ELE) 209 6 T 32 R F 2 (ELE) 209 6 T 32 R F 2 (ELE) 211 6 T 32 R F 2 (ELE) 211 6 T 32 R F 2 (ELE) 215 10 T 32 R F 2 (ELE) 215 10 T 32 R F 2 (ELE) 216 10 T 32 R F 2 (ELE) 217 10 T 32 R F 2 (ELE) 218 10 T 32 R F 2 (ELE) 219 219 10 T 32 R F 2 (ELE) 210 T 32 R F 2 (ELE) 210 T 32 R F 2 (ELE) 211 T 32 R F 2 (ELE) 212 T 32 R F 2 (ELE) 213 T 32 R F 3 (ELE) 214 T 32 R F 2 (ELE) 215 T 32 R F 2 (ELE) 216 T 32 R F 2 (ELE) 217 T 32 R F 2 (ELE) 218 T 32 R F 2 (ELE) 219 T 32 R F 2 (ELE) 219 T 32 R F 2 (ELE) 219 T 32 R F 2 (ELE) 210 T 32 R F 2 (ELE) 220 T 32 R F 2 (ELE) 230 T 32 R F 2 (ELE) 240 T 32 R F 2 (ELE) 250 T 32 R F 2	F421L F431L12 F431L12 F431L12 F431L12 F431L14 F431L14 F431L14 F431L15 F431L15 F431L16 F431L16 F431L16 F431L16 F431L16 F431L17 F431L16 F431L17 F431L17 F431L18	Watson	60 0.4 60 0.3 60 0.2 60 0.2 60 0.4 60 0.4 60 0.4 60 0.4 60 0.6 60 0.6 90 0.6 60 0.2 60 0.6 60 0.4 60 0.3 60 0.4 60 0.3 60 0.4 60 0.4 60 0.3 60 0.4 60 0.3 60 0.4 60 0.3 60 0.3 60 0.4 60 0.3 60 0.3 60 0.4 60 0.3 60 0.4 60 0.1 60 0.1 60 0.1 60 0.2 60 0.1	SW S	3360 3360 3360 3360 4368 3360 4368 3360 3360 3360 3360 3360 3360 3360 3	1,008 806 1,210 948 2,016 2,016 2,016 1,572 1,57	6 T 38 5 T 38 4 T 78 6 T 78 7 T 4 ft 1 10 T 78 34 T 78 34 T 78 34 T 78 34 T 78 35 T 78 36 T 78 36 T 78 37 T 78 38 T 78 39 T 78 30 T 78 4 T 8 30 T 78 30 T 78 30 T 78 4 T 8 30 T 78 4 T 8 30 T 8 4 T 8 5	8 R LED  10 R	RTLED38 RTLED4 STLED4	38 38 38 38 38 15 38 38 40 40 50 38 25 40 40 40 40 40 40 40 40 40 40	0.2 0.2 0.2 0.2 0.1 0.4 0.4 0.2 1.4 0.2 2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.5 0.5 0.5 0.7 0.1	C-OCC	2,352 2,352 4,368 2,352	447 358 558 558 558 558 558 558 558 558 558	561 (0.1 449 (0.1 673	\$ 64.70 \$ 53.91 \$ 43.13 \$ 64.70 \$ 64.70 \$ 47.53 \$ 107.83 \$ 107.83 \$ 107.83 \$ 107.83 \$ 46.70 \$ 46.70 \$ 46.70 \$ 46.70 \$ 18.13 \$ 74.50 \$ 107.83 \$ 107.	\$ 1,687.50 \$ 1,451.25 \$ 1,215.00 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 2,632.50 \$ 2,632.50 \$ 1,215.00 \$ 1,215.00	\$ 170 \$ 145 \$ 120 \$ 170 \$ 170 \$ 170 \$ 170 \$ 120 \$ 170 \$ 120 \$ 270 \$ 120 \$ 270 \$ 120 \$ 280 \$ 280 \$ 280 \$ 320 \$	26.1 26.9 28.2 26.1 26.1 27.0 24.4 13.7 35.4 26.1 35.2 35.2 10.0 18.0 286.0 14.5 36.8
203   6   T 32 R F 2 (ELE)	F421L F431L12 F431L12 F431L12 F431L12 F431L14 F431L14 F431L14 F431L15 F431L15 F431L16 F431L16 F431L16 F431L16 F431L16 F431L17 F431L16 F431L17 F431L17 F431L18		60 0.4 60 0.3 60 0.2 60 0.2 60 0.4 60 0.4 60 0.4 60 0.4 60 0.6 60 0.6 90 0.6 60 0.2 60 0.6 60 0.4 60 0.3 60 0.4 60 0.3 60 0.4 60 0.4 60 0.3 60 0.4 60 0.3 60 0.4 60 0.3 60 0.3 60 0.4 60 0.3 60 0.3 60 0.4 60 0.3 60 0.4 60 0.1 60 0.1 60 0.1 60 0.2 60 0.1	SW S	3360 3360 3360 3360 4368 3360 4368 3360 3360 3360 3360 3360 3360 3360 3	1,008 806 1,210 948 2,016 2,016 2,016 1,572 1,57	6 T 38 5 T 38 4 T 78 6 T 78 7 T 4 ft 1 10 T 78 34 T 78 34 T 78 34 T 78 34 T 78 35 T 78 36 T 78 36 T 78 37 T 78 38 T 78 39 T 78 30 T 78 4 T 8 30 T 78 30 T 78 30 T 78 4 T 8 30 T 78 4 T 8 30 T 8 4 T 8 5	8 R LED  10 R	RTLED38 RTLED4 STLED4	38 38 38 38 38 15 38 38 40 40 50 38 25 40 40 40 40 40 40 40 40 40 40	0.2 0.2 0.2 0.2 0.1 0.4 0.4 0.2 1.4 0.2 2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.5 0.5 0.7 0.1	COCC	2,352 2,352 4,368 2,352	447 358 558 558 558 558 558 558 558 558 558	561 (0.1 449 (0.1 673	\$ 64.70 \$ 53.91 \$ 43.13 \$ 64.70 \$ 64.70 \$ 47.53 \$ 107.83 \$ 107.83 \$ 107.83 \$ 107.83 \$ 46.70 \$ 46.70 \$ 46.70 \$ 46.70 \$ 18.13 \$ 74.50 \$ 107.83 \$ 107.	\$ 1,687.50 \$ 1,451.25 \$ 1,215.00 \$ 1,687.50 \$ 1,687.50 \$ 1,687.50 \$ 2,632.50 \$ 2,632.50 \$ 1,215.00 \$ 1,215.00	\$ 170 \$ 145 \$ 120 \$ 170 \$ 170 \$ 170 \$ 170 \$ 120 \$ 170 \$ 120 \$ 270 \$ 120 \$ 270 \$ 120 \$ 280 \$ 280 \$ 280 \$ 320 \$	26.1 26.9 28.2 26.1 26.1 27.0 24.4 13.7 35.4 26.1 35.2 35.2 10.0 18.0 286.0 14.5 36.8
205	F42LL F42LL F42LL F42LL F42LL F42LL F43LL		60 0.3 60 0.2 60 0.4 31 0.2 60 0.6 60 0.6 60 0.6 60 0.6 60 0.6 60 0.6 70 0.7 7172 0.3 71 0.0 7172 0.3 71 0.0 7172 0.3 71 0.0	SW S	3360 3360 3360 3360 4368 3360 4368 3360 3360 3360 3360 3360 3360 3360 3	1,008 806 1,210 948 2,016 2,016 2,016 1,572 1,57	5 T 388 4 T 38 6 T 38 6 T 38 7 4 th 1 10 T 38 110 T 38 110 T 38 12 T 38 13 T 59 14 T 59 15 T 58 15 T 58 16 T 78 16 T 78 17 T 78 18 T 7	8 R LED  18 R LED  9 R LED  9 R LED  9 R LED  9 R LED  10 R L	RTLED38 STLED4 RTLED38 STLED4 RTLED39 STLED4 RTLED50 STLED4 RTLED50 STLED4 RTLED50 STLED4 STLED55 STLED4 STLED56 STLE	38 38 38 38 38 15 38 38 40 40 50 38 25 40 40 40 40 40 40 40 40 40 40	0.2 0.2 0.2 0.1 0.4 0.4 0.2 1.4 0.2 1.8 0.1 0.5 0.0 0.5 0.5 0.0 0.5 0.7 0.1 0.1 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	COCC COCC COCC COCC COCC COCC COCC COC	2,352 2,352 4,368 2,352	447 358 558 558 558 558 558 558 558 558 558	561 (0.1 449 (0.1 673	\$ 53,91 \$ 43,13 \$ 64,70 \$ 64,70 \$ 10,75 \$ 107,83 \$ 107,83 \$ 107,83 \$ 85,37 \$ 349,92 \$ 64,70 \$ 135,17 \$ 463,13 \$ 105,10 \$	\$ 1,461,25 \$ 1,216,05 \$ 1,687,50 \$ 1,687,50 \$ 1,687,50 \$ 1,288,40 \$ 2,632,50 \$ 1,288,40 \$ 1,283,50 \$ 1,283,50 \$ 1,283,50 \$ 1,283,50 \$ 1,2397,80 \$ 1,818,40 \$ 163,215,50 \$ 1,425,50 \$ 3,341,25 \$ 3,341,25 \$ 4,320,00 \$ 4,320,00 \$ 4,520,00 \$ 4,520,00 \$ 5,530,40 \$ 5,500,40 \$ 5,500,	\$   145     \$   120     \$   120     \$   120     \$   170     \$   170     \$   170     \$   170     \$   125     \$   270     \$   5   270     \$	26.9 28.2 26.1 26.1 27.0 26.1 27.0 26.1 27.0 26.1 27.0 26.1 27.0 26.1 26.1 27.0 26.1 26.1 26.1 26.1 26.1 26.1 26.1 26.1
207 209 6 T 32 R F 2 (ELE) 211 6 T 32 R F 2 (ELE) 215 Hallway 7 S 28 P F 1 (ELE) 216 10 T 32 R F 2 (ELE) 217 10 T 32 R F 2 (ELE) 217 10 T 32 R F 2 (ELE) 218 Ground Floor Addition Weight Room 50 34 T 32 R F 2 (ELE) 34 T 32 R F 2 (ELE) 35 S 2 T 33 R F 2 (ELE) 36 S 34 T 32 R F 2 (ELE) 37 T 32 R F 2 (ELE) 38 Band Room 50 45 T 32 R F 2 (ELE) 45 S S 2 T 33 R F 2 (ELE) 46 S S 2 T 33 R F 2 (ELE) 56 S S 2 T 33 R F 2 (ELE) 57 S S S 5 T 32 R F 2 (ELE) 58 S S 5 T 32 R F 2 (ELE) 58 S S 5 T 32 R F 2 (ELE) 59 S S S S S S S S S S S S S S S S S S S	F421L F421L F421L F421L F421L F421L F421L F431L12		60 0.4 60 0.4 61 0.6 60 0.4 61 0.6 60 0.4 61 0.6 60 0.4 61 0.6 60 0.4 61 0.6 60 0.4 60 0.4	SW S	3360 3360 3360 4368 3360 4368 3360 3360 3360 3360 3360 3360 3360 3	806 1,210 1,210 1,210 948 2,016 2,016 1,572 6,854 1,210 1,420 925 3,145 83 5,242 4,838 2,449 1,551 2,903 7,26 3,33 6,45 6,628 1,651 8,33 6,72 8,35 6,72 8,35 8,36 8,37 8,37 8,38 8,38 8,38 8,38 8,38 8,38	4 T 38 6 6 T 38 6 6 T 38 6 6 T 38 6 6 T 38 6 7 7 4 ftt 1 10 T 38 10 7 7 4 ftt 1 10 T 38 10 7 7 4 ftt 1 10 T 38 10 7 7 4 ftt 1 10 T 38 10 7 7 8 10 7 8	8 R LED 8 R LED 8 R LED 10 B R LED 10 B R LED 10 B R LED 10 R LED	RTLED38 RTLED4 RTLED38 RTLED4 STLED4 STLED5 STLED4 STLED4 STLED4 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 S	38 38 38 38 38 38 38 38 40 40 40 50 50 50 50 50 50 50 50 50 5	0.2 0.2 0.2 0.1 0.4 0.4 0.2 1.4 0.2 1.8 0.1 0.5 0.0 0.5 0.5 0.0 0.5 0.7 0.1 0.1 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	C-0000 C-	2,352 2,352 4,368 2,352	358   556	449 0.1 673 0.1 673 0.1 673 0.1 489 0.1 122 0.2 122 0.2 122 0.2 129 0.9 10.1 128 0.0 10.1 10.1 10.1 10.1 10.1 10.1 10.1	\$ 43.13 \$ 64.70 \$ 46.70 \$ 47.79 \$ 107.83 \$ 107.83 \$ 107.83 \$ 88.37 \$ 469.20 \$ 64.70 \$ 555.17 \$ 469.21 \$ 74.36 \$ 186.14 \$ 1.85 \$ 297.41 \$ 227.40 \$ 12.50 \$ 107.40 \$ 10	\$ 1,215,00 \$ 1,687,50 \$ 1,687,50 \$ 1,268,50 \$ 2,632,50 \$ 2,632,50 \$ 1,215,00 \$ 1,215,00 \$ 1,215,00 \$ 1,215,00 \$ 1,215,00 \$ 1,687,50 \$ 1,687,50	\$ 120 S 120	28.2 26.1 26.1 26.1 27.0 24.4 13.7 26.1 35.4 26.1 36.2 36.2 36.2 36.2 36.2 36.2 36.2 36.0 18.0 286.0 14.5 36.8
211 6 7 32 R F 2 (ELE) Hallway 7 7 S 29 P F 1 (ELE) 215 10 7 32 R F 2 (ELE) 216 10 7 32 R F 2 (ELE) 217 10 7 32 R F 2 (ELE) 317 10 7 32 R F 2 (ELE) Ground Floor Addition Weight Room 50 34 17 32 R F 2 (ELE) Ground Floor Addition Weight Room 50 6 7 32 R F 2 (ELE) Ground Floor Addition Weight Room 50 6 7 32 R F 2 (ELE) Band Room 54 45 17 32 R F 2 (ELE) Sand Room 54 45 17 32 R F 2 (ELE) Sand Room 54 45 17 32 R F 2 (ELE) Grist Locker Room 56 1 37 17 R F 2 (ELE) Grist Locker Room 56 1 27 17 R F 2 (ELE) Hallway 20 21 32 R F 2 (ELE) Sounce 51 22 17 32 R F 2 (ELE) Sounce 51 22 17 32 R F 2 (ELE) 50 12 17 32 R F 2 (ELE) 51 17 32 R F 2 (ELE) 52 17 32 R F 2 (ELE) 53 12 17 32 R F 2 (ELE) 54 17 32 R F 2 (ELE) 55 12 17 32 R F 2 (ELE) 55 17 32 R	F42LL F41ILL F42LL F42LL F42LL F43ILI2 F43ILI2 F43ILI2 F42LL F42LL F42LL F42LL F42LL F42LL F42LL F42LL F43ILI2 F43ILI3 F43ILI2 F43ILI2 F43ILI2 F43ILI3 F43ILI2 F43ILI2 F43ILI2 F43ILI3 F43ILI2		60 0.4 31 0.2 60 0.6 60 0.6 60 0.6 90 0.4 60 0.2 60 0.3 60 0.3 60 0.4 60 0.2 7 172 0.3 90 1.2 90 1.2 90 1.2 90 1.2 90 0.4 90 0.4 90 0.7	SW S	3360 4358 3360 3360 4368 3360 3360 3360 3360 3360 2688 2688 4368 3360 3360 3360 3360 3360 2688 2688 2688 2688 2688 2688 2688 26	1,210 948 2,016 2,016 1,572 6,854 1,210 1,572 6,854 1,210 1,	1	8 R LED LED Tube 8 R LED 9 R LED 9 R LED 10 PR	RTLED38 200722rl RTLED38 RTLED38 RTLED38 RTLED38 RTLED38 RTLED38 RTLED4 RTLED50 RTLED60 RTLED6	38 38 38 38 38 40 40 40 50 50 38 40 40 40 40 40 40 40 40 40 40 40 40 40	0.1 0.4 0.4 0.4 0.2 1.4 0.2 2.1 1.8 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	C-OCC	2,352 2,352 4,368 2,352	536 549 894 1, 894 1, 894 1, 664 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	673 (0.1 489 (0.1 122 (0.2 122 (0.2 122 (0.2 123 (0.6 123	\$ 64.70 \$ 47.59 \$ 47.59 \$ 107.83 \$ 107.83 \$ 107.83 \$ 64.70 \$ 469.20 \$ 64.70 \$ 555.17 \$ 469.21 \$ 74.36 \$ 186.14 \$ 12.50 \$ 122.50 \$ 122.50 \$ 104.81 \$ 123.50 \$ 104.81 \$ 106.81 \$	\$ 1,687,50 \$ 1,268,60 \$ 2,632,50 \$ 2,632,50 \$ 1,215,00 \$ 1,215,00 \$ 1,215,00 \$ 1,687,50 \$ 1,887,50 \$ 16,321,50 \$ 7,42,50 \$ 3,442,50 \$ 3,442,50 \$ 3,442,50 \$ 3,442,50 \$ 5,50 \$ 6,690,60 \$ 6,690,60 \$ 6,690,60 \$ 6,690,60 \$ 6,690,60 \$ 6,990,60 \$ 6,900,60 \$ 6,	\$ 170 s 170	26.1 27.0 24.4 24.4 13.7 26.1 35.4 26.1 35.2 36.2 36.2 36.2 36.2 36.0 18.0 286.0 14.5 36.8
Halway	F41ILL F42LL F42LL F43LL2 F43LL2 F43LL2 F42LL F43LL F42LL F42LL F42LL F42LL F43LE2 F43LL2 F43LL3 F43LL3 F43LL4 F43LL F43LL4 F43LL4 F43LL4 F43LL4 F43LL5 F43LL5 F43LL5 F43LL5 F43LL5 F43LL5 F43LL6 F43LL6 F43LL6 F43LL6 F43LL6 F43LL6 F43LL7 F43LT		1	SW S	4398 3360 4368 4368 3360 3360 3360 3360 3360 2688	948 2016 2016 2016 1.572 6.854 1.210 10.483 9.072 925 3.1445 83 5.242 4.838 2.419 1.512 82 3.333 3.33 7.26 3.33 3.33 7.26 3.33 3.33 3.33 3.33 3.33 3.33 3.33 3	7 4 fttl 7 1 4 fttl 10 7 38 10 7 188 10 7 188 10 7 188 14 8 7 189 14 8 7 189 15 189 16 8 7 189 16 8 7 189 17 189 18 18 189 18 18 189 18 18 189 18 18 189 18 18 189 18 18 189 18 18 189 18 18 18 18 18 18 18 18 18 18 18 18 18 1	LED TUDE  8 R LED  8 R LED  9 R LED  9 R LED  LED4  8 R LED  9 R LED  10 R LED  9 R LED  25 R LED  25 R LED  10 R LE	200732rl RTLED38 RTLED38 RTLED38 RTLED38 STLED4 STLED4 RTLED38 STLED4 RTLED50 RTLED50 PRTLED50 PRTLED50 STLED4 RTLED50 STLED4 RTLED50 STLED4 STLED4 STLED4 STLED4 RTLED50 STLED4 RTLED50 STLED4 RTLED50 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED6 STLED6 STLED6 STLED6 STLED6 STLED7 STLED	15 15 15 15 38 38 38 40 40 40 50 50 50 50 40 40 40 40 40 40 40 40 40 40 40 40 40	0.1 0.4 0.4 0.4 0.2 1.4 0.2 2.1 1.8 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	COCC	2,352 2,352 4,368 2,352	459   984   1, 984   1, 984   1, 984   1, 984   1, 964   3,199   3, 536   4,892   5, 4,234   4,234   4,234   4,234   3, 1986   1,236   2,288   2, 2, 1, 1, 1, 2, 1	489 0.1 122 0.2 1929 0.9 192 0.6 195 0.7 195 0.7 195 0.7 195 0.7 195 0.7 195 0.7 195 0.0 195 0.7 195 0.0 195 0.7 195 0.0 195 0	\$ 47.59 \$ 107.83 \$ 88.77 \$ 349.92 \$ 64.70 \$ 555.17 \$ 463.13 \$ 74.36 \$ 186.7 \$ 12.50 \$ 12.50 \$ 10.50 \$	\$ 1.286.49 to \$ 2.632.50 \$ 2.632.50 \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$ \$ 2.632.50 \$	\$ 125 125 125 125 125 127 125 127 125 127 125 127 125 127 125 127 125 127 125 127 125 125 125 125 125 125 125 125 125 125	27.0 24.4 24.4 13.7 35.4 35.2 10.0 18.0 286.0 14.5 35.2 10.0 18.0 286.0 14.5 35.8 17.9
215	F42LL F43LL12 F43LL12 F43LL12 F43LL12 F42LL F42LL F42LL F42LL F42LL F42LL F42LL F43LL2 F43LL2 F43LL2 F43LL2 F43LL2 F43LL1 F43LL		60 2.0 60 0.4 60 3.1 60 2.7 172 0.3 90 1.2 31 0.0 60 1.2 60 1.4 60 0.7 90 0.5 31 0.0 31 0.0 60 1.4 60 0.7 90 0.5 60 1.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1	SW S	3360 3360 4368 3360 3360 3360 3360 2688 2688 4368 3360 3360 3360 2888 2888 2888 2888 2888 2888 2888 28	2,016 2,016 1,572 6,854 1,210 1,0483 9,072 3,145 83 5,242 4,838 2,419 2,419 83 6,028 161 83 161 83 161 83 161 83 161 83	10 T 38 4 STU 6 T 38 52 STU 2 T 50 13 T 59 11 27 24 STU 12 27 25 STU 13 STU 14 STU 2 STU 2 STU 1 STU 2 STU 1 STU 2 STU 2 STU 1 STU 2 STU 2 STU 1 STU	8 R LED  9 R LED  4 P LED4  8 R LED  1.ED4  1.ED4  1.ED4  1.ED5  1.ED6  1.ED7	RTLED38  RTLED38  RTLED38  RTLED38  RTLED4  RTLED38  STLED4  STLED4  STLED4  STLED4  STLED50  RTLED50  STLED4  STLED4  STLED4  STLED4  STLED4  STLED50  STLED50  STLED50  STLED6	38 38 38 38 40 40 40 50 50 38 25 25 40 40 40 40 40 40 40 40 40 40 40 40 40	0.2 2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.5 0.2 0.0 0.5 0.0 0.5 0.7 0.0 0.7	C-0000 C-	2,352 2,352 4,368 2,352	894	122 (0.2 122 (0.2 123 (0.2 124) (0.2 125) (0.2 125) (0.1	\$ 107.83 \$ 107.83 \$ 107.83 \$ 88.37 \$ 489.22 \$ 64.70 \$ 555.17 \$ 463.13 \$ 74.36 \$ 186.14 \$ 1.65 \$ 297.41 \$ 125.50 \$ 102.50 \$ 103.50 \$ 103.50	\$ 2,632.50 \$ 2,632.50 \$ 1,215.00 \$ 1,215.00 \$ 1,687.50 \$ 1,687.50 \$ 16,321.50 \$ 3,742.50 \$ 3,341.25 \$ 4,320.00 \$ 3,441.25 \$ 4,320.00 \$ 4,320.00 \$ 5,412.50 \$ 5,412.50 \$ 6,690.60 \$ 6,690.60 \$ 6,690.60 \$ 93.40 \$ 1,696.80 \$ 1,696.80	\$ 270 \$ 270 \$ 120 \$ 120 \$ 5 170 \$ 180 \$ 190 \$ 190 \$ 190 \$ 190 \$ 200 \$ 320 \$ 32	24.4 24.4 113.7 35.4 26.1 35.2 35.2 10.0 18.0 286.0 14.5 36.8 36.8 36.8 36.8 375.7 51.1 67.5 88.3 45.4 52.7 188.1
217	F42LL F43LL1 F43LL2 F42LL F42LL F42LL F42LL F42LL F42LL F43LE F43LL2 F22LL F12LL F43LL2 F43LL3 F43LL		60 2.0 60 0.4 60 3.1 60 2.7 172 0.3 90 1.2 31 0.0 60 1.2 60 1.4 60 0.7 90 0.5 31 0.0 31 0.0 60 1.4 60 0.7 90 0.5 60 1.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1	SW S	3360 4368 3360 3360 3360 3360 2688 2688 4368 3360 3360 3360 3360 2688 2688 2688 2688 2688 4368 2688 2688 2688 3024 3024 2688 2688 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 3024 2688 3024 3024 3024 3024 3024 3024 3024 3024	2,016 1,572 6,854 1,210 10,483 9,072 925 3,146 83 5,242 4,838 1,57 28,305 2,903 323 726 363 64 6,028 161 83 167 83 167 83 2,419	10 T 38 4 STU 6 T 38 52 STU 2 T 50 13 T 59 11 27 24 STU 12 27 25 STU 13 STU 14 STU 2 STU 2 STU 1 STU 2 STU 1 STU 2 STU 2 STU 1 STU 2 STU 2 STU 1 STU	8 R LED  9 R LED  4 P LED4  8 R LED  1.ED4  1.ED4  1.ED4  1.ED5  1.ED6  1.ED7	RTLED38 STLED4 RTLED38 RTLED4 STLED4 STLED4 STLED4 RTLED50 RTL	40 38 40 40 50 38 25 40 40 38 15 15 15 40 40 40 40 40 40 40 40 40 40	0.2 2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.5 0.2 0.0 0.5 0.0 0.5 0.7 0.0 0.7	C-0000	2,352 2,352 2,352 2,352 1,862 2,688 4,368 2,352 2,352 2,352 1,882 2,352 1,882 2,688	894	122 02 909 02 656 07 673 0.1 591 10 898 10 898 10 898 10 898 10 898 10 898 10 16 10 10 10 10 10 10 10 10 10 10 10 10 10	\$ 107.83 \$ 88.37 \$ 449.92 \$ 64.70 \$ 555.17 \$ 463.13 \$ 74.36 \$ 185.14 \$ 125.25 \$ 297.41 \$ 105.25 \$ 105.	\$ 2,632.50 \$ 1,215.00 \$ 12,397.80 \$ 1,887.80 \$ 16,871.80 \$ 16,871.80 \$ 742.50 \$ 3,341.25 \$ 4,320.00 \$ 4,530.80 \$ 1,451.25 \$ 415.20 \$ 270.00 \$ 6,690.60 \$ 6,690.60 \$ 1,696.80 \$ 1,696.80 \$ 1,696.80 \$ 983.40 \$ 1,696.80 \$ 1,696.80	\$ 270 \$ 120 \$ 120 \$ 530 \$ 530 \$ 530 \$ 500 \$ 500 \$ 500 \$ 700 \$ 345 \$ 350 \$ 320 \$ 320 \$ 350 \$ 350 \$ 200 \$ 350 \$ 350 \$ 200 \$ 350 \$	24.4 13.7 13.7 13.7 13.7 13.6 14.6 14.6 14.6 14.6 14.6 14.6 14.6 14
Ground Floor Addision Weight Room 50 Hard Room 54 S4 Stranse S4 Stranse S4 Stranse S4 Stranse S4 Stranse S4 Stranse S6 S1 Hallway S6 S2	F43ILL/2 F42IL F42IL F42IL F42IL F42IL F42IL F42IL F42IL F43ILL/2 F23ILL/2 F23ILL/2 F43ILL/2		60 2.0 60 0.4 60 3.1 60 2.7 172 0.3 90 1.2 31 0.0 60 1.2 60 1.4 60 0.7 90 0.5 31 0.0 31 0.0 60 1.4 60 0.7 90 0.5 60 1.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1	SW S	3360 3360 3360 3360 2688 2688 2688 3360 3360 3360 2688 2688 2688 2688 4362 2688 2688 2688 4362 2688 3024 2688 2688 2688 4368 3024 2688 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 3024 2688 3024 3024 2688 3024 3024 3024 2688 3024 3024 2688 3024 3024 3024 3024 3024 3024 3024 3024	6,854 1,210 10,483 9,072 9,25 3,145 83 5,242 4,338 167 1,512 83 167 2,305 2,903 3,23 7,26 363 363 4,60,28 161 83 161 83 2,419 83 161 83 2,419	4 T 593 34 STU 6 T 38 52 STU 45 STU 45 STU 13 T 59 11 ZT 2 20 ZT 2 21 ZT 2 20 ZT 2 21 ZT 2 24 STU 12 STU 14 ttt 2 A ttt 30 T 59 1 A ttt 2 STU 2 STU 2 STU 1 STU 1 STU 1 STU 1 A ttt 1 STU	9 R LED LED4 8 R LED 8 R LED LED4 0 R LED 9 R LED 9 R LED 25 R LED 25 R LED LED4 40 F G (EE) 10 F G (E	STLED4 RTLED38 STLED4 STLED4 RTLED50 RTLED50 RTLED50 PRTLED 28TLED STLED4 RTLED50 STLED4 STLED4 STLED4 RTLED50 STLED4 RTLED50 STLED4 RTLED50 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED4 STLED5 STLED6 STLED6 STLED6 STLED6 STLED6 STLED7 S	40 38 40 40 50 38 25 40 40 38 15 15 15 40 40 40 40 40 40 40 40 40 40	0.2 2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.5 0.2 0.0 0.5 0.0 0.5 0.7 0.0 0.7	C-OCC	2,352 2,352 2,352 2,352 1,862 2,688 4,368 2,352 2,352 2,352 1,882 2,352 1,882 2,688	664 3,199 3,3199 3,586 4,892 5,4234 4,892 4,234 4,188 1,328 1,67 67 2,184 3,2258 2,258 2,258 2,129 1,129 1,129 1,195 56 28,305 1,935 215 339 169 38	909   0.2 \$656   0.7 \$673   0.1 \$911   1.0 \$838   0.9 \$737   0.2 \$817   0.7 \$16   0.0 \$0.88   0.7 \$580   0.5 \$590   0.2 \$55   0.0 \$110   0.0 \$98   0.4 \$100   0.0 \$990   0.2 \$100   0.0 \$100   0.	\$ 349.92 \$ 64.70 \$ 555.17 \$ 453.13 \$ 74.26 \$ 165.5 \$ 165.5 \$ 227.41 \$ 123.50 \$ 109.6 \$	\$ 1,215.00 \$ 12,378.05 \$ 1,687.50 \$ 18,818.05 \$ 16,321.50 \$ 742.50 \$ 3,341.25 \$ 472.50 \$ 425.00 \$ 4,320.00 \$ 4,550.40 \$ 5,500.40 \$ 5,500.40 \$ 6,650.60 \$ 6,650.60 \$ 6,650.60 \$ 9,536.60 \$ 9,536.60 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80 \$ 9,536.80	\$ 120 \$ \$30 \$ \$170 \$ \$ 800 \$ \$ \$ 80 \$ \$ 80 \$ \$ 70 \$ \$ 345 \$ \$ 70 \$ \$ 380 \$ \$ 380 \$ \$ 145 \$ \$ 35 \$ \$ 20 \$ 20	35.4 26.1 35.2 10.0 18.0 286.0 14.5 35.8 36.8 36.8 36.8 37.7 15.1 16.7 17.7
Ground Floor Addition Weight Room 50  Wrestling Room 52  52  52  53  54  54  54  54  54  54  54  54  54	F421L F421L F421L F421L F421L F431L12 F431L12 F431L12 F431L12 F431L1 F431L F43		60 0.4 60 3.1 60 2.7 172 0.3 90 1.2 91 1.2 90 1.2 90 1.2 90 1.2 90 1.2 90 0.1 60 1.4 60 0.7 90 0.3 31 0.0 90 0.3 31 0.0 90 0.0 90 0.0 90 0.0 90 0.1 90 0.1 90 0.1 90 0.1 90 0.1 90 0.1 90 0.1	SW S	3360 3360 3360 2888 2888 2888 4368 3360 3360 3360 2888 2888 2888 2888 2888 2888 2888 28	1,210 10,483 9,072 925 3,145 83 5,242 4,838 2,419 1,512 83 1,512 28,305 2,333 726 333 726 161 81 161 83 161 83 2,419	6 T 38 52 STLI 45 STLI 2 T 50 13 T 59 1 1 ZT 2 20 ZT 2 21 ZT 2 20 ZT 2 21 ZT 2 21 ZT 2 24 STLI 25 STLI 2 STLI 1 4 ftt 2 STLI 2 STLI 1 4 ftt 1 STLI 2 STLI 1 4 ftt 1 STLI 1 4 ftt 1 STLI 1 4 ftt 1 STLI 1 STLI 1 4 ftt 1 STLI 1 STL	8 R LED LED4 O R LED O R LED O R LED O R LED S R LED 25 R LED 25 R LED LED4 LED4 LED4 LED4 LED4 LED4 LED5 LED7 LED7 LED7 LED7 LED7 LED7 LED7 LED7	RTLED38 STLED4 STLED4 STLED4 STLED50 RTLED50 STLED4 STLED4 STLED4 STLED4 STLED50 STLED50 STLED50 STLED50 STLED50 STLED60 STLED600 STLED600 STLED600 STLED600 STLED600 STLED600 STLED600 STLED600 STLED600 STLE	38 40 40 50 50 38 25 25 40 40 40 40 40 40 40 40 40 40 40 40 40	0.2 2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.5 0.2 0.0 0.5 0.0 0.5 0.7 0.0 0.7	C-OCC	1,882 2,688 2,688 4,368 2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,117 2,117 1,882	536 4,892 4,234 4,892 188 1,328 1,328 1,328 1,129 1,129 1,129 1,129 1,129 1,129 1,129 1,129 1,129 1,129 1,129 1,129 1,135 1,13	673 0.1 591 1.0 838 0.9 737 0.2 817 0.7 16 0.0 058 0.7 589 0.5 290 0.2 205 0.3 55 0.0 110 0.0 968 0.4 108 0.0 387 0.1	\$ 64.70 \$ 535.17 \$ 463.13 \$ 74.36 \$ 186.14 \$ 1.65 \$ 297.41 \$ 123.50 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ 1.096 \$ 11.01 \$	\$ 1,887,50 \$ 18,818,40 \$ 742,50 \$ 742,50 \$ 3,341,25 \$ 4,220,00 \$ 8,830,80 \$ 4,550,40 \$ 11,451,25 \$ 560,40 \$ 270,00 \$ 6,690,60 \$ 983,40 \$ 1,696,80	\$ 170   \$ 800   \$ 695   \$ 70   \$ 345   \$ 70   \$ 345   \$ 320   \$ 200   \$ 200   \$ 25   \$ 35 	26.1 35.2 35.2 10.0 18.0 286.0 286.0 14.5 36.8 13.9 75.7 51.1 67.5 89.3 86.3 13.9 15.7 15.7 15.7
Wrestling Room 54	F421L F421L F44SE F43IL12 F22IL F22IL F22IL F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL14 F43IL1 F43IL14 F43IL1 F43IL15 F43IL1 F43IL12		60 3.1 60 2.7 172 0.3 90 1.2 31 0.0 60 1.2 60 1.4 60 0.7 90 0.5 31 0.0 31 0.0 31 0.1 60 1.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1	SW SW SW SW SW SW SW SW SW SW SW SW SW S	3360 3360 2888 2688 2688 4368 3360 3360 2688 2688 2688 3024 4368 2688 2688 2688 3024 4368 2688 2688 3024 2688 3024 2688 3024 2688 3024 2688 3024 3024 2688 3024 3024 3024 3024 3024 3024 3024 3024	9,072 925 3,145 83 5,242 4,838 2,419 1,512 83 161 28,305 2,303 363 54 6,028 161 83 161 83 161 83 2,419	\$2 STILL 45 STL4 2 T 50 13 T 59 11 2T 2 20 2T 2 24 STL4 5 T 15 5 T 59 11 2T 2 22 STL4 23 STL4 2 STL4 2 STL4 2 STL4 2 STL4 2 STL4 2 STL4 1 STL4 2 STL4 1 STL4	LED4 LED4 OR LED OR LED OR LED SP LED 25 R LED 25 R LED 25 R LED LED4 LED4 LED4 LED6 LED6 LED7 LED7 LED7 LED7 LED7 LED7 LED8 LED8 LED8 LED8 LED8 LED8 LED8 LED8	STLED4 STLED4 RTLED50 RTLED38 2RTLED 2RTLED STLED4 RTLED50 STLED4 RTLED38 200732x1 200732x1 200732x1 200732x1 STLED4 STLED5 STLED4 STLED4 STLED5 STLED5 STLED6 STLED6 STLED6 STLED6 STLED6 STLED6 STLED7 STLED6 STLED7 STLED6 STLED7 STLED7 STLED7 STLED6 STLED7 STLE	40 50 38 25 25 40 40 38 15 38 15 40 40 40 40 40 40 20 25 40	2.1 1.8 0.1 0.5 0.0 0.5 1.0 0.5 0.2 0.0 0.0 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0	C-00C	1,882 2,688 2,688 4,368 2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,117 2,117 1,882	4,224 4, 188 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,338 1,339 1,69 3,38	838 0.9 737 0.2 817 0.7 16 0.0 058 0.7 580 0.5 290 0.2 065 0.3 55 0.0 110 0.0 - 0.0 988 0.4 108 0.0 337 0.1	\$ 463.13 \$ 74.36 \$ 186.14 \$ 1.65 \$ 297.41 \$ 247.00 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ 1.96 \$ 1.96 \$ 1.97 \$ 1.96	\$ 18.818.40 \$ 16.321.50 \$ 742.50 \$ 3,341.25 \$ 472.50 \$ 8.830.80 \$ 4.550.40 \$ 1.451.25 \$ 415.20 \$ 560.40 \$ 5 6,690.60 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40 \$ 983.40	\$ 800 \$ 695 \$ 70 \$ 345 \$ 70 \$ 320 \$ 200 \$ 145 \$ 50 \$ 50 \$ 20 \$ 20 \$ 20 \$ 20 \$ 38 \$ 20 \$ 20 \$ 38 \$ 38 \$ 38 \$ 38 \$ 38 \$ 38 \$ 38 \$ 38	35.2 10.0 18.0 18.0 14.5 35.8 36.8 13.9 75.7 15.1.1 67.5 89.3 45.4 52.7 188.1
Band Room 54	F42LL F44SE F43IL12 F43IL12 F22LL FU2LL F42LL F42LL F42LL F43IL12 F41ILL F43IL12 F41ILL F41ILL F41ILL F42LL F43LL		90 12 31 0.0 60 12 60 0.7 90 0.5 31 0.0 31 0.1 60 1.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1	SW S	3360 2688 2688 2688 2688 2688 2688 2688 26	9,072 925 3,145 83 5,242 4,838 2,419 1,512 83 161 28,305 2,303 363 54 6,028 161 83 161 83 161 83 2,419	45 STILL 2 T 50 13 T 59 11 ZT 2 20 ZT 2 20 ZT 2 21 STILL 15 T 59 1 4 th 2 4 th 30 T 54 18 STILL 2 STILL 2 STILL 1 STIL	LED4  OR LED  OR LED  OR LED  OR LED  SR LED  25 R LED  25 R LED  LED4  LED4  HED Tube  LED Tube	28TLED 28TLED4 STLED4 RTLED38 RTLED38 200732x1 200732x1 200732x1 F46GHL STLED4 STLED4 STLED4 STLED4 STLED4 STLED4 F2IILL 28TLED4 STLED4	40 50 38 25 25 40 40 38 15 38 15 40 40 40 40 40 40 20 25 40	0.5 0.2 0.0 0.0 10.5 0.7 0.1	C 0000 C 00000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 00000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 00000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 00000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 0000 C 00000 C 0000 C 00	1,882 2,688 2,688 4,368 2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,117 2,117 1,882	4,224 4, 188 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,328 1,338 1,339 1,69 3,38	838 0.9 737 0.2 817 0.7 16 0.0 058 0.7 580 0.5 290 0.2 065 0.3 55 0.0 110 0.0 - 0.0 988 0.4 108 0.0 337 0.1	\$ 463.13 \$ 74.36 \$ 186.14 \$ 1.65 \$ 297.41 \$ 247.00 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ 1.96 \$ 1.96 \$ 1.97 \$ 1.96	\$ 16.321.50 \$ 742.50 \$ 3,341.25 \$ 472.50 \$ 4,320.00 \$ 8,830.80 \$ 1,451.25 \$ 415.20 \$ 560.40 \$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	\$ 695 \$ 70 \$ 345 \$ 70 \$ 320 \$ 380 \$ 200 \$ 35 \$ 50 \$ 5 \$ 5 \$ 5 \$ 5 \$ 5 \$ 20 \$ 20 \$ 35 \$ 20 \$ 35 \$ 20 \$ 35 \$ 35 \$ 5 \$ 5 \$ 5 \$ 35 \$ 5 \$ 5 \$ 5 \$ 5 \$ 5 \$ 5 \$ 5 \$ 5 \$ 5 \$	35.2 10.0 18.0 18.0 14.5 35.8 36.8 13.9 75.7 15.1.1 67.5 89.3 45.4 52.7 188.1
S4 Storage	F43IL12 F22IL F12ZIL F12ZIL F42ZIL F42ZIL F42ZIL F43IL12 F43IL12 F43IL1 F43IL12 F43IL12		90 12 31 0.0 60 12 60 0.7 90 0.5 31 0.0 31 0.1 60 1.1 60 0.1 60 0.1 60 0.1 60 0.1 60 0.1	SW SW SW SW SW SW SW SW SW SW SW SW SW S	2688 2688 4368 4368 3360 3360 3360 2688 2688 2688 39024 3024 3024 2688 2688 2688 2688 2688 2688 2688 26	925 3,145 83 5,242 4,838 2,419 1,512 83 167 28,305 2,903 323 726 363 64 6,028 161 83 161 83 2,419	2 T 50 13 T 59 11 ZT 2 20 ZT 2 24 STH 15 T 59 11 4 Ht 25 T 4 11 2 T 5 27 2 24 STH 25 T 5 26 T 6 27 2 28 T 1 29 T 7 20 T 7	0 R LED 9 R LED 25 R LED 25 R LED 25 R LED 25 R LED LED4 LED4 LED4 LED Tube	28TLED 28TLED4 STLED4 RTLED38 RTLED38 200732x1 200732x1 200732x1 F46GHL STLED4 STLED4 STLED4 STLED4 STLED4 STLED4 F2IILL 28TLED4 STLED4	50 38 25 25 40 40 38 15 15 351 40 40 40 40 20 25 40	0.5 0.2 0.0 0.0 10.5 0.7 0.1	C-OCC	2,688 4,368 2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,117 2,117 1,882	188 1,328 1, 67 2,184 3, 2,258 2, 1,129 1, 147 1, 28 56 56 58,305 1,935 2,15 339 169 38	737 0.2 817 0.7 16 0.0 058 0.7 550 0.5 290 0.2 065 0.3 55 0.0 110 0.0 - 0.0 988 0.4 108 0.0 337 0.1 194 0.0	\$ 186.14 \$ 1.65 \$ 297.41 \$ 247.00 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ 1.01 \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 74250 \$ 3341.25 \$ 472.50 \$ 8830.80 \$ 8830.80 \$ 1,4550.40 \$ 1451.25 \$ 4152.05 \$ 560.40 \$ 270.00 \$ 6,983.40 \$ 1,696.80 \$ 983.40	\$ 70 \$ 345 \$ 70 \$ 320 \$ 380 \$ 200 \$ 145 \$ 35 \$ 50 \$ 20 \$ 20 \$ 36 \$ 20 \$ 36 \$ 20 \$ 38 \$ 36 \$ 20 \$ 36 \$ 36 \$ 36 \$ 36 \$ 36 \$ 36 \$ 36 \$ 36	10.0 i 18.0 i 18.0 i 286.0 i 14.5 i 35.8 i 36.8 i 13.9 i 75.7 i 51.1 i 189.3 i 45.4 i 52.7 i 188.1
Girls Locker Room 66	F22LL F12LL F12LL F42LL F43LL/2 F43LL/2 F43LL/2 F41LL F41LL F41LL F44LL F42LL F43LL F42LL F43LL		60 0.7 90 0.5 31 0.0 31 0.1 351 0.5 60 1.1 60 0.1 60 0.1 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW SW SW SW SW SW S	2688 4368 3360 3360 3360 2688 2688 2688 2688 2688 4368 4368 2688 4588 2688 2688 2688 2688 2688 2688	83 5,242 4,838 2,419 1,512 83 167 28,305 2,903 323 726 363 54 6,028 161 83 161 83 2,419	1 2T2: 20 2T2: 24 STILL 12 STILL 5 T.59 1 4 Ht. 2 4 4Ht. 2 5 STILL 4 SSTILL 1 4 Ht. 1 SSTILL 1 4 Ht. 1 SSTILL 1	25 R LED 25 R LED LED4 LED4 LED4 9 R LED LED Tube	28TLED 28TLED4 STLED4 RTLED38 RTLED38 200732x1 200732x1 200732x1 F46GHL STLED4 STLED4 STLED4 STLED4 STLED4 STLED4 F2IILL 28TLED4 STLED4	40 40 38 15 15 351 40 40 40 20 25 40	0.5 0.2 0.0 0.0 10.5 0.7 0.1	C-OCC	2,688 4,368 2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,117 2,117 1,882	67 2,184 3, 2,256 2, 2,256 2, 1,129 1, 447 1, 28 56 56 28,305 1,935 2,15 339 169 38	16 0.0 58 0.7 580 0.5 590 0.5 290 0.2 065 0.3 55 0.0 110 0.0 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ 1.65 \$ 297.41 \$ 247.00 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 4,320.00 \$ 8,830.80 \$ 4,550.40 \$ 1,451.25 \$ 560.40 \$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	0 \$ 320 0 \$ 380 0 \$ 200 0 \$ 145 0 \$ 35 0 \$ 50 0 \$ 20 0 \$ 290 0 \$ 20	286.0 1 14.5 1 35.8 36.8 36.8 13.9 175.7 51.1 67.5 89.3 45.4 52.7 188.1
Hallway	FUZLL F42LL F42LL F43ILL2 F41IIL F46GHL F42LL F41ILL F42LL F41ILL F42LL F43ILL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2		60 0.7 90 0.5 31 0.0 31 0.1 351 0.5 60 1.1 60 0.1 60 0.1 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW SW SW SW SW SW S	3360 3360 3360 2688 2688 2688 2688 2688 2688 3024 3024 2688 4368 2688 2688 2688 2688 2688 2688 2688	4.838 2.419 1.512 83 167 28,305 2.903 323 726 363 54 6.028 161 83 161 83 2.419	20	25 R LED LED4 BR LED BR LED BR LED BR LED LED Tube LED Tube LED Tube LED4 BR LED	STLED4  STLED4  RTLED38  Z0073241  20073241  20073241  STLED4  STLED4  STLED4  STLED4  STLED4  F2IILL  ØTLED4  STLED4	40 40 38 15 15 351 40 40 40 20 25 40	0.5 0.2 0.0 0.0 10.5 0.7 0.1	C-OCC	4,368 2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,688 2,117 2,117 1,882	2,258 2, 1,129 1, 447 1, 28 56 28,305 1,935 215 339 169 38	580 0.5 290 0.2 065 0.3 55 0.0 110 0.0 - 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ 247.00 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 4,320.00 \$ 8,830.80 \$ 4,550.40 \$ 1,451.25 \$ 560.40 \$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	0 \$ 320 0 \$ 380 0 \$ 200 0 \$ 145 0 \$ 35 0 \$ 50 0 \$ 20 0 \$ 290 0 \$ 20	14.5 35.8 36.8 5 13.9 75.7 51.1 1 67.5 89.3 0 45.4 1 188.1
Science 61   24	F42LL F43ILI2 F43ILI2 F43ILI2 F41ILL F41ILL F41ILL F46OHL F42LL F43LL		60 0.7 90 0.5 31 0.0 31 0.1 351 0.5 60 1.1 60 0.1 60 0.1 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW SW SW SW SW SW S	3360 3360 3360 2688 2688 2688 2688 2688 2688 3024 3024 2688 4368 2688 2688 2688 2688 2688 2688 2688	4.838 2.419 1.512 83 167 28,305 2.903 323 726 363 54 6.028 161 83 161 83 2.419	24 STILL 12 STILL 15 T 59 5 T 59 1 4 ft tl 2 4 ft tl 30 T 54 18 STILL 2 STILL 2 STILL 1 1 5 T 5 1 4 STILL 1 1 5 T 5 1 5 T 5 1 4 STILL 1 4 STILL 1 4 5 T 5 1 5 T 5 1 4 5 T 6 1 4 5 T 6 1 4 5 T 7 1 4 5 T 7 1 4 5 T 7 1 4 5 T 7 1 4 5 T 7 1 4 5 T 7 1 4 5 T 7 1 5 T 7 1 4 5 T 7 1 5 T 7 1 4 5 T 7 1 5 T	LED4  BR LED  BR LED  LED Tube  W F 5 (ELE) (T-5)  LED4  LED6  LED6  LED7  LED	STLED4  STLED4  RTLED38  Z0073241  20073241  20073241  STLED4  STLED4  STLED4  STLED4  STLED4  F2IILL  ØTLED4  STLED4	40 40 38 15 15 351 40 40 40 20 25 40	0.5 0.2 0.0 0.0 10.5 0.7 0.1	COCC COCC COCC COCC COCC COCC COCC COC	2,352 2,352 2,352 1,882 1,882 2,688 2,688 2,117 2,117 1,882	2,258 2, 1,129 1, 447 1, 28 56 28,305 1,935 215 339 169 38	580 0.5 290 0.2 065 0.3 55 0.0 110 0.0 - 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ 247.00 \$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 8,830.80 \$ 4,550.40 \$ 1,451.25 \$ 415.20 \$ 560.40 \$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 963.40	\$ 380 \$ 200 \$ 145 \$ 55 \$ 50 \$ 20 \$ 290 \$ 290 \$ 80	35.8 36.8 13.9 75.7 151.1 67.5 89.3 45.4 152.7 188.1
SS	F42LL F43LL/2 F41ILL F41ILL F46GHL F42LL F41ILL F42LL F41ILL F42LL F41ILL F42LL F43LIL/2 F43ILI/2		60 0.7 90 0.5 31 0.0 31 0.1 351 0.5 60 1.1 60 0.1 60 0.1 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW SW SW SW SW SW S	3360 3360 2688 2688 2688 2688 2688 3024 3024 2688 4388 2688 2688 2688 2688 2688 2688 2688 3360	2,419 1,512 83 167 28,305 2,903 323 726 363 64 6,028 161 83 161 83 2,419	12 STILL 15 T 59 1 4 ft ft 1 2 4 ft 1 30 T 54 18 STILL 2 STILL 4 STILL 1 S 171 1 STILL 1 STILL 1 4 ft 1 1 STILL 1 STIL	LED4 9 R LED LED Tube LED Tube LED Tube LED Tube LED Tube LED4 LED4 LED4 LED4 LED4 LED4 LED4 LED4	STLED4  RTLED38  200732xl  200732xl  F46GHL  STLED4  200732xl	40 38 15 15 351 40 40 40 40 20 25 40 15	0.5 0.2 0.0 0.0 10.5 0.7 0.1	C-OCC	2,688 2,688 2,117 2,117 1,882	1,129 1, 447 1, 28 56 28,305 1,935 215 339 169 38	290 0.2 065 0.3 55 0.0 110 0.0 - 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ 123.50 \$ 104.19 \$ 5.48 \$ 10.96 \$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 4,550.40 \$ 1,451.25 \$ 415.20 \$ 560.40 \$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	\$ 200 is \$ 145 is 35 is 50 is 20 is 20 is 20 is 20 is 80	36.8 13.9 5 75.7 51.1 0 67.5 89.3 0 45.4 0 188.1
Starage	F43IL12 F41IIL F41IIL F41IIL F46GHL F42LL F43LL F42LL F43LL		31 0.1 351 10.5 60 1.1 60 0.1 60 0.2 60 0.2 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW SW SW SW SW SW S	3360 2888 2888 2888 2888 2888 2888 2888 28	83 167 28,305 2,903 323 726 363 54 6,028 161 83 161 83 2,419	1 4 ft	LED Tube LED Tube LED Tube LED Tube LED Tube LED4 LED4 LED4 LED4 LED4 LED4 LED4 LED4	RTLED38 200732x1 200732x1 F46GHL STLED4 STLED4 STLED4 STLED4 STLED4 F21IIL 2RTLED STLED4 200732x1 STLED4 200732x1	15 351 40 40 40 40 20 25 40	0.2 0.0 0.0 10.5 0.7 0.1 0.2	C-OCC	2,688 2,688 2,117 2,117 1,882	447 1. 28 56 56 28,305 1,935 215 339 169 38	065 0.3 55 0.0 110 0.0 - 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ 104.19 \$ 5.48 \$ 10.96 \$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 1,451,25 \$ 415,20 \$ 560,40 \$ 270,00 \$ 6,690,60 \$ 983,40 \$ 16,96,80 \$ 983,40	is \$ 145 0 \$ 35 0 \$ 50 0 \$ 20 0 \$ 290 0 \$ 20 0 \$ 80	13.9 75.7 10 10 10 10 10 10 10 10 10 10
Storage   2   S.28 P.F.1 (ELE)	F41ILL F46GHL F46CHL F46CHL F46CHL F42CL F42CL F42CL F42CL F42CL F21ILL F21ILL F47L F47L F47L F47L F47L F47L F47L F4		31 0.1 351 10.5 60 1.1 60 0.1 60 0.2 60 0.2 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW SW SW SW SW SW S	2688 2688 2688 2688 3024 3024 2688 4368 2688 2688 2688 2688 3680 3360	83 167 28,305 2,903 323 726 363 54 6,028 161 83 161 83 2,419	1 4 ft	LED Tube LED Tube LED Tube LED Tube LED Tube LED4 LED4 LED4 LED4 LED4 LED4 LED4 LED4	200732xl F46GHL STLED4 STLED4 STLED4 STLED4 STLED4 STLED4 F21IIL 28TLED STLED4 200732xl STLED4 200732xl	15 351 40 40 40 40 20 25 40		C-OCC	2,688 2,688 2,117 2,117 1,882	28 56 28,305 1,935 215 339 169 38	55 0.0 110 0.0 - 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ 5.48 \$ 10.96 \$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 415.20 \$ 560.40 \$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	35 50 50 50 50 50 50 50 50 50 5	75.7 51.1 67.5 89.3 45.4 52.7 188.1
Gym Boys Locker Room Bys Locker Room Bys Locker Room Bys Locker Room System F 2 (ELE) Trainer 4 1173 x R F 2 (ELE) Trainer 4 1173 x R F 2 (ELE)  Restroom 1 173 x R F 2 (ELE) Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Restroom 1 1 173 x R F 2 (ELE) Boys Rostroom 1 1 173 x R F 2 (ELE) Boys	F46GHL F42LL F42LL F42LL F42LL F42LL F42LL F21IIL F42LL F41IIL F42LL F41ILL F42LL F43LL2 F43LL2 F43LL2 F43LL2 F43LL2 F43LL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2 F43ILL2		60 1.1 60 0.1 60 0.2 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW C-OCC C-OCC SW	3024 3024 2688 4368 2688 2688 2688 2688 2688 3360	2,903 323 726 363 54 6,028 161 83 161 83 2,419	30 T 54 18 STLL 2 STLL 4 STLL 2 STLL 1 S 17 23 ZT 2 1 STLL 1 STLL 1 STLL 1 STLL 1 STLL 1 STLL 1 AftL 1 STLL	4 W F 6 (ELE) (T-5) LED4 LED4 LED4 LED4 LED4 LED4 LED5 LED6 LED6 LED7 LED7 LED7 LED7 LED7 LED7 LED7 LED7	STLED4  STLED4  STLED4  STLED4  F21IIL  2RTLED  STLED4  200732x1  STLED4  200732x1	40 40 40 20 25 40 15		C-OCC C-OCC C-OCC C-OCC C-OCC C-OCC C-OCC C-OCC	2,688 2,688 2,117 2,117 1,882	28,305 1,935 215 339 169 38	- 0.0 968 0.4 108 0.0 387 0.1 194 0.0	\$ - \$ 99.13 \$ 11.01 \$ 37.34 \$ 18.67 \$ 1.44	\$ 270.00 \$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	0 \$ 20 0 \$ 290 0 \$ 20 0 \$ 80	67.5 89.3 45.4 52.7 188.1
Boys Locker Room	F42LL F42LL F42LL F42LL F42LL F42LL F21ILL F21ILL F22LL F42LL F43LL		60 1.1 60 0.1 60 0.2 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW C-OCC C-OCC SW	3024 3024 2688 4368 2688 2688 2688 2688 2688 3360	2,903 323 726 363 54 6,028 161 83 161 83 2,419	18 STLE 2 STLL 4 STLL 2 STLE 2 STLE 1 STLE 1 STLE 1 STLE 1 STLE 1 STLE 1 4ftL 1 STLE 12 STLE 1 STLE	LED4 LED4 LED4 LED4 7 C F 1(ELE) 25 R LED LED4 LED 1000	STLED4  STLED4  STLED4  STLED4  F21IIL  2RTLED  STLED4  200732x1  STLED4  200732x1	40 40 40 20 25 40 15		C-OCC C-OCC C-OCC C-OCC C-OCC C-OCC	2,688 2,688 2,117 2,117 1,882	1,935 215 339 169 38	387 0.1 194 0.0	\$ 37.34 \$ 18.67 \$ 1.44	\$ 6,690.60 \$ 983.40 \$ 1,696.80 \$ 983.40	0 \$ 290 0 \$ 20 0 \$ 80	89.3 45.4 52.7 188.1
Boys Locker Room	F42LL F42LL F42LL F42LL F21ILL FU2LL F41ILL F41ILL F41ILL F42LL F43LIL2 F43LL12 F43LL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12		60 0.2 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW C-OCC C-OCC SW	3024 3024 2688 4368 2688 2688 2688 2688 2688 3360	323 726 363 54 6,028 161 83 161 83 2,419	2 STLI 4 STLI 2 STLI 1 S 17 23 27 23 1 STLI 1 STLI 1 STLI 1 4 ftL 1 STLI 1 4 ftL 12 STLI 12 STLI	LED4 LED4 LED4 LED4 7 C F 1(ELE) 25 R LED LED4 LED Tube LED1 Ube LED4 LED1 Ube	STLED4 F21ILL 2RTLED STLED4 200732x1 STLED4 200732x1	40 40 20 25 40 15		C-OCC C-OCC C-OCC C-OCC C-OCC	2,688 2,117 2,117 1,882	339 169 38	387 0.1 194 0.0	\$ 37.34 \$ 18.67 \$ 1.44	\$ 983.40 \$ 1,696.80 \$ 983.40	\$ 20 \$ 80	89.3 45.4 52.7 188.1
Office 2 11 32 R F 2 (ELE) Restroom 1 S170 F (ELE) Hallway 23 27 32 R F 2 (U) (ELE) Boys Restroom 1 173 28 F 2 (ELE) Boys Restroom 1 1 73 28 F 2 (ELE) Girls Restroom 1 1 8 28 P F 1 (ELE) Girls Restroom 1 1 8 28 P F 1 (ELE) Girls Restroom 1 1 8 28 P F 1 (ELE) 30 12 173 28 F 2 (ELE) 31 173 28 F 2 (ELE) 32 12 173 28 F 2 (ELE) 33 12 173 28 F 2 (ELE) 33 12 173 28 F 2 (ELE) 33 12 173 28 F 2 (ELE) 34 173 28 F 2 (ELE) 35 12 173 28 F 2 (ELE) 37 12 173 28 F 2 (ELE) 37 12 173 28 F 2 (ELE) 38 173 28 F 2 (ELE) 39 12 173 28 F 2 (ELE) 41 150 18 173 28 F 3 (ELE) 41 173 28 F 2 (ELE)	F42LL F42LL F21ILL F21ILL F21ILL F42LL F43LL		60 0.2 60 0.1 20 0.0 60 1.4	SW SW SW SW SW SW SW SW C-OCC C-OCC SW	3024 3024 2688 4368 2688 2688 2688 2688 2688 3360	726 363 54 6.028 161 83 161 83 2.419	4 STU 2 STU 1 S 17 23 ST 27 1 STU 1 STU 1 STU 1 4ft 1 STU 1 4ft 1 STU	LED4 LED4 7 C F I/ELED 22 SR LED LED4 LED4 LED Tube LED4 LED Tube LED Tube LED4 LED Tube	STLED4 F21ILL 2RTLED STLED4 200732x1 STLED4 200732x1	40 40 20 25 40 15		C-OCC C-OCC C-OCC C-OCC	2,117 2,117 1,882	339 169 38	387 0.1 194 0.0	\$ 37.34 \$ 18.67 \$ 1.44	\$ 1,696.80 \$ 983.40	\$ 80	45.4 52.7 188.1
Office Restroom 1 ST7C F (ELE) Restroom 1 ST7C F (ELE) Hallway 23 27 32 R F 2 (0) (ELE) Boys Restroom 1 1732 R F 2 (ELE) Boys Restroom 1 S28 P F 1 (ELE) Girls Restroom 1 S28 P F 1 (ELE) Girls Restroom 1 S28 P F 1 (ELE) 30 12 1732 R F 2 (ELE) 31 1732 R F 2 (ELE) 32 12 1732 R F 2 (ELE) 33 12 1732 R F 2 (ELE) 35 12 1732 R F 2 (ELE) 36 12 1732 R F 2 (ELE) 37 12 1732 R F 2 (ELE) 38 12 1732 R F 2 (ELE) 39 12 1732 R F 2 (ELE) 41 10 1732 R F 3 (ELE) 41 10 1732 R	F21ILL F12IL F12IL F12IL F42IL F42IL F41IIL F42IL F43IL F43I		20 0.0 60 1.4	SW SW SW SW SW SW C-OCC C-OCC SW	3024 2688 4368 2688 2688 2688 2688 2688 3360	363 54 6,028 161 83 161 83 2,419	2 STLE 1 S17 23 27 2: 1 STLE 1 STLE 1 4ftL 1 STLE 1 4ftL 1 STLE 1 STLE 2 STLE	LED4 7 C F 1(ELE) 25 R LED LED4 LED4 LED Tube LED1 Tube LED4 LED Tube	STLED4 F21ILL 2RTLED STLED4 200732x1 STLED4 200732x1	40 20 25 40 15	0.1 0.0 0.6 0.0 0.0	C-OCC C-OCC C-OCC	2,117 1,882 4,368	169 38	194 0.0	\$ 18.67 \$ 1.44	\$ 983.40	\$ 50	52.7
Hallway	FUZIL F47IL			SW SW SW SW SW C-OCC C-OCC	4368 2688 2688 2688 2688 2688 3360	161 83 161 83 2,419 2,419	23 27 2: 1 STLE 1 4 ft.L 1 STLE 1 4 ft.L 12 STLE	25 R LED LED4 LED Tube LED4 LED Tube LED4	2RTLED STLED4 200732x1 STLED4 200732x1	25 40 15	0.0 0.6 0.0 0.0	C-OCC C-OCC	1,882 4,368	38 2,512 3					188.1
Boys Restroom	F42LL F41ILL F41ILL F42LL F43LL			SW SW SW C-OCC C-OCC	2688 2688 2688 2688 3360	161 83 161 83 2,419 2,419	1 STLE 1 4ftL 1 STLE 1 4ftL 1 STLE 1 STLE	LED4 LED Tube LED4 LED Tube LED4	200732x1 STLED4 200732x1	40 15	0.6 0.0 0.0	C-OCC	4,368	2,512 3	16 0.0		\$ 270.00	\$ 20	
Boys Restroom	F41ILL F42LL F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F43IL12 F53IL12		31 0.0 60 0.1 31 0.0 60 0.7 60 0.7 60 0.7	SW SW SW C-OCC C-OCC SW	2688 2688 2688 3360	83 161 83 2,419 2,419	1 4ftL 1 STLE 1 4ftL 12 STLE	LED Tube LED4 LED Tube LED4	200732x1 STLED4 200732x1	15	0.0	U-000		75	516 0.8 86 0.0	\$ 342.02 \$ 8.38	\$ 4,927.50 \$ 626.70	\$ 365	14.4 74.8
Girls Restroom  1	F42LL F41IIL F41IIL F42IL F43IL		60 0.1 31 0.0 60 0.7 60 0.7 60 0.7	C-OCC SW	2688 2688 3360	2,419	1 STLE 1 4 ft L 12 STLE	LED4 LED Tube LED4	STLED4 200732x1	40		C-OCC	1,002	28	55 0.0	\$ 5.48	\$ 415.20	\$ 35	75.7
Girk Restrom  1 S 28 P F I (ELE)  30 12 17 32 R F 2 (ELE)  31 12 17 32 R F 2 (ELE)  33 12 17 32 R F 2 (ELE)  33 12 17 32 R F 2 (ELE)  33 12 17 32 R F 2 (ELE)  35 12 17 32 R F 2 (ELE)  37 12 17 32 R F 2 (ELE)  39 12 17 32 R F 2 (ELE)  41 12 17 32 R F 2 (ELE)  51 15 6 27 17 R F 3 (ELE)  15 17 32 R F 3 (ELE)  15 18 18 18 18 18 18 18 18 18 18 18 18 18	F41ILL F42LL F43ILL2		31 0.0 60 0.7 60 0.7 60 0.7	C-OCC SW		2,419	1 4 ft L 12 STLE	LED Tube LED4	200732x1		0.0	C-OCC	1,882	75	86 0.0	\$ 8.38	\$ 626.70	\$ 35	74.8
32	F42LL F43ILL/2 F43ILL/2 F43ILL/2 F43ILL/2 F43ILL/2 F43ILL/2 F43ILL/2 F43ILL/2		60 0.7 60 0.7 60 0.7	C-OCC SW		2,419			CTLED4	15	0.0	C-OCC	1,882	28	86 0.0 55 0.0	\$ 5.48	\$ 415.20	\$ 35	74.8 75.7
31 12 11 32 R F 2 (ELE) 33 12 11 33 R F 2 (ELE) 35 12 11 33 R F 2 (ELE) 37 12 11 32 R F 2 (ELE) 39 12 11 32 R F 2 (ELE) 39 12 11 32 R F 2 (ELE) 41 12 17 32 R F 2 (ELE) 42 17 17 2 R F 2 (ELE) 43 17 17 2 R F 2 (ELE) 44 17 17 2 R F 2 (ELE) 45 17 17 2 R F 2 (ELE) 46 17 17 2 R F 2 (ELE) 47 17 2 R F 2 (ELE) 48 17 2 R F 2 (ELE) 49 19 19 19 19 19 19 19 19 19 19 19 19 19	F42LL F42LL F42LL F42LL F42LL F42LL F42LL F42LL F43LL2		60 0.7 60 0.7		3360	2,419	12 STLE			40	0.5	NONE	3,360		806 0.2	\$ 80.44			
33	F42LL F42LL F42LL F42LL F42LL F42LL F42LL F23ILL F43ILL2 F43LL12 F43LL2 F43LL2 F43LL2 F43LL2 F43ILL2 F43ILL2		0.7					LED4 LED4	STLED4	40 40	0.5	NONE	3,360	1,613	806 0.2 290 0.2	\$ 80.44 \$ 123.50	\$ 4,280.40	\$ 180	53.2
35 11 21 11 32 R F 2 (ELE) 37 12 11 33 R F 2 (ELE) 39 12 11 32 R F 2 (ELE) 41 150 150 16 17 32 R F 3 (ELE) 5 STABLO DÍTICO 6 STABLO DÍ	F42LL F42LL F42LL F42LL F42LL F43LL2		60 0.7	SW	3360	2,419		LED4 LED4	STLED4 STLED4	40	0.5	C-00C	2,352	1,129 1,	290 0.2	\$ 123.50 \$ 123.50	\$ 4,550.40 \$ 4,550.40		36.8
37 12 11 32 R F 2 (ELE) 39 12 11 32 R F 2 (ELE) 41 17 32 R F 3 (ELE) 41 17 32 R F 3 (ELE) 51 17 32 R F 3 (ELE) 41 150 16 17 32 R F 3 (ELE) 41 150 16 17 32 R F 3 (ELE) 41 150 16 17 32 R F 3 (ELE) 41 150 16 17 32 R F 3 (ELE) 41 150 16 17 32 R F 3 (ELE) 41 150 16 17 32 R F 3 (ELE) 41 150 17 32 R F 3 (ELE) 41 150 18 18 18 18 18 18 18 18 18 18 18 18 18	F42LL F42LL F23LL F23LL F43LL/2 F42LL F42LL F43LL/2 F43LL/2 F43LL/2 F43LL/2 F43LL/2	1	60 0.7	SW	3360	2,419	12 STLE	LED4	STLED4	40	0.5	C-OCC	2,352		290 0.2	\$ 123.50	\$ 4,550.40		
41	F42LL F23ILL F43ILL2 F42LL F42LL F42LL F43ILL2 F43ILL2 F43ILL2 F43ILL2		60 0.7	C-OCC	3360	2,419	12 STLE	LED4	STLED4	40	0.5	NONE	3,360	1,613	806 0.2	\$ 80.44	\$ 4,280.40	\$ 180	53.2
1st Floor Faculty 8 T 32 R F 3 (ELE)  Small Office 1 1732 R F 2 (ELE)  150 16 T 32 R F 2 (ELE)  152 16 T 32 R F 3 (ELE)  154 16 T 32 R F 3 (ELE)  155 16 T 32 R F 3 (ELE)  156 16 T 32 R F 3 (ELE)  156 16 T 32 R F 3 (ELE)  157 17 18 18 18 18 18 18 18 18 18 18 18 18 18	F23ILL F43ILV2 F42LL F42LL F43ILV2 F43ILV2 F43ILV2		60 0.7	C-OCC	3360	2,419	12 STLE	LED4	STLED4	40	0.5	NONE NONE	3,360	1,613	806 0.2	\$ 80.44	\$ 4,280.40	\$ 180	53.2
1st Floor Faculty 8 T 32 R F 3 (ELE)  Small Office 1 1732 R F 2 (ELE)  150 16 T 32 R F 2 (ELE)  152 16 T 32 R F 3 (ELE)  154 16 T 32 R F 3 (ELE)  155 16 T 32 R F 3 (ELE)  156 16 T 32 R F 3 (ELE)  156 16 T 32 R F 3 (ELE)  157 17 18 18 18 18 18 18 18 18 18 18 18 18 18	F431L/2 F42LL F42LL F431L/2 F431L/2 F431L/2		60 0.7 47 0.3	C-OCC SW	3360 4368	2,419	12 STLE	LED4	STLED4	40 25	0.5	NONE	3,360	1,613	806 0.2	\$ 80.44	\$ 4,280.40	\$ 180	53.2
Smail Office	F42LL F42LL F43ILL/2 F43ILL/2 F43ILL/2		90 0.7	SW	3024	1,232 2,177		25 R LED 9 R LED	2RTLED RTLED38	38	0.2	C-00C	4,368	655 644 1.	577 0.1 534 0.4	\$ 56.08 \$ 151.53	\$ 1,485.00 \$ 2,160.00		
150 16 T 32 R F 3 (ELE) 154 16 T 32 R F 3 (ELE) 154 16 T 32 R F 3 (ELE) 154 16 T 32 R F 3 (ELE) 155 16 T 32 R F 3 (ELE) 156 16 T 32 R F 3 (ELE) 151 8 T 32 R F 3 (ELE) 151 8 T 32 R F 3 (ELE) 153 8 T 32 R F 3 (ELE) 155 8 T 32 R F 3 (ELE) 155 8 T 32 R F 3 (ELE) 156 Conference Room 157 9 T 32 R F 3 (ELE) 157 Office 4 S 28 P F 1 (ELE) 158 Office 2 T 32 R F 2 (ELE) 159 Office 17 T 32 R F 3 (ELE) 159 Office 17 T 32 R F 3 (ELE) 150 Office 17 T 32 R F 3 (ELE) 150 Office 17 T 32 R F 3 (ELE) 150 Office 17 T 32 R F 3 (ELE) 150 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 151 Office 17 T 32 R F 2 (ELE) 152 Office 17 T 32 R F 2 (ELE) 153 Office 17 T 32 R F 2 (ELE) 154 Office 17 T 32 R F 2 (ELE) 155 Office 17 T 32 R F 2 (ELE) 156 Office 17 T 32 R F 2 (ELE) 157 Office 17 T 32 R F 2 (ELE) 158 Office 17 T 32 R F 2 (ELE) 159 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 151 Office 17 T 32 R F 2 (ELE) 152 Office 17 T 32 R F 2 (ELE) 153 Office 17 T 32 R F 2 (ELE) 154 Office 17 T 32 R F 2 (ELE) 155 Office 17 T 32 R F 2 (ELE) 156 Office 17 T 32 R F 2 (ELE) 157 Office 17 T 32 R F 2 (ELE) 158 Office 17 T 32 R F 2 (ELE) 159 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 151 Office 17 T 32 R F 2 (ELE) 152 Office 17 T 32 R F 2 (ELE) 153 Office 17 T 32 R F 2 (ELE) 154 Office 17 T 32 R F 2 (ELE) 155 Office 17 T 32 R F 2 (ELE) 156 Office 17 T 32 R F 2 (ELE) 157 Office 17 T 32 R F 2 (ELE) 158 Office 17 T 32 R F 2 (ELE) 159 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 151 Office 17 T 32 R F 2 (ELE) 152 Office 17 T 32 R F 2 (ELE) 153 Office 17 T 32 R F 2 (ELE) 154 Office 17 T 32 R F 2 (ELE) 155 Office 17 T 32 R F 2 (ELE) 157 Office 17 T 32 R F 2 (ELE) 158 Office 17 T 32 R F 2 (ELE) 159 Office 17 T 32 R F 2 (ELE) 150 Office 17 T 32 R F 2 (ELE) 151 Office 17 T 32 R F 2 (ELE) 152 Office 17 T 32 R F 2 (ELE) 153 Office 17 T 32 R F 2 (ELE) 154 Office	F43ILL/2 F43ILL/2 F43ILL/2		60 0.1	SW	3024 3024	181	1 STLE	LED4	STLED4	40	0.0	C-OCC	2,117	85	97 0.0	\$ 9.33	\$ 626.70	\$ 35	67.1
152 16 T 32 R F 3 (ELE) 156 16 T 32 R F 3 (ELE) 156 16 T 32 R F 3 (ELE) 156 16 T 32 R F 3 (ELE) 157 17 8 F 2 (U) (ELE) 158 17 32 R F 2 (U) (ELE) 159 18 T 32 R F 3 (ELE) 150 18 T 32 R F 3 (ELE) 151 18 18 T 32 R F 3 (ELE) 151 18 18 T 32 R F 3 (ELE) 153 18 T 32 R F 3 (ELE) 153 18 T 33 R 7 2 (U) (ELE) 153 18 T 32 R F 3 (ELE) 154 18 1 T 32 R F 3 (ELE) 155 18 1 T 32 R F 3 (ELE) 157 18 1 T 32 R F 3 (ELE) 158 1 T 32 R F 3 (ELE) 159 1 T 32 R F 3 (ELE) 150 1 T 32 R F 3 (ELE) 151 18 1 T 32 R F 3 (ELE) 152 1 T 32 R F 3 (ELE) 153 18 1 T 32 R F 3 (ELE) 154 18 1 T 32 R F 3 (ELE) 155 18 1 T 32 R F 3 (ELE) 159 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 1 T 32 R F 3 (ELE) 150 18 18 1 T 32 R F 3 (ELE) 150 18 18 1 T 32 R F 3 (ELE) 150 18 18 1 T 32 R F 3 (ELE) 160 18 18 1 T 32 R F 3 (ELE) 170 18 18 1 T 32 R F 3 (ELE) 180 180 180 180 180 180 180 180 180 180	F43ILL/2 F43ILL/2		60 0.1	SW	2688	161	1 STLE	LED4	STLED4	40	0.0	C-OCC	1,882	75	86 0.0	\$ 8.38	\$ 626.70	\$ 35	74.8
154 16 T 32 R F 3 (ELE) 156 16 T 32 R F 3 (ELE) 157 17 18 17 3 R F 3 (ELE) 158 17 3 R F 3 (ELE) 159 18 17 3 R F 3 (ELE) 159 18 17 3 R F 3 (ELE) 150 18 17 3 R F 2 (ELE) 150 18 18 18 18 18 18 18 18 18 18 18 18 18	F43ILL/2		90 1.4	SW	3360	4,838		9 R LED	RTLED38	38	0.6	C-OCC			408 0.8	\$ 333.40	\$ 4,050.00		
156	F43ILL/2		90 1.4	SW	3360 3360	4,838 4.838		9 R LED 9 R LED	RTLED38 RTLED38	38	0.6	C-OCC	2,352		408 0.8	\$ 333.40 \$ 333.40	\$ 4,050.00 \$ 4,050.00		12.1
Hallway 20 21 32 K F 2 (I) (ELE) 151 8 T 32 R F 3 (ELE) 153 8 T 32 R F 3 (ELE) 153 8 T 32 R F 3 (ELE) 155 8 T 33 R T 33 R F 3 (ELE) 155 8 T 33 R T 33			90 1.4	SW	3360	4,838	16 T 59	9 R LED	RTI FD38	38	0.6	0.000	2,352		408 0.8 408 0.8	\$ 333.40	\$ 4,050.00		12.1
153 8 T 32 R F 3 (ELE)  155 8 T 32 R F 3 (ELE)  Conference Room 157 9 T 32 R F 3 (ELE)  Lbrary 35 113 28 F 2 (ELE)  Office 4 S 28 P F 1 (ELE)  Office 2 T 32 R F 3 (ELE)  Hallway 10 213 28 F 2 (U) (ELE)  Storage 1 213 28 F 2 (U) (ELE)  Restroom 1 2 20 W F 1 (MAG)  Restroom 1 2 20 W F 1 (MAG)  Restroom 1 S 28 P F 1 (ELE)  Restroom 2 113 28 F 2 (U) (ELE)  132 8 113 28 F 2 (ELE)  132 132 8 113 28 F 2 (ELE)  133 8 113 28 F 2 (ELE)  131 8 113 28 F 2 (ELE)  132 8 113 28 F 2 (ELE)  133 8 113 28 F 2 (ELE)  134 18 113 28 F 2 (ELE)  135 18 113 28 F 2 (ELE)  137 8 113 28 F 2 (ELE)  138 18 113 28 F 2 (ELE)	FU2LL		60 1.2	SW	4368	5,242		25 R LED	2RTLED	25	0.5	C-OCC	4,368		058 0.7	\$ 297.41			
155   8   T 32 R F 3 (ELE)	F43ILL/2		90 0.7	SW	3360	2,419	8 T 59	9 R LED	RTLED38	38	0.3	C-OCC	2,352	715 1,	704 0.4	\$ 166.70	\$ 2,160.00	\$ 220	13.0
Conference Room 157  Library  35  11 32 R F 2 (ELE)  Office  4 S 28 P F 1 (ELE)  Office  2 T 32 R F 2 (ELE)  Hallway  10 27 32 R F 2 (U) (ELE)  Storage  1 27 32 R F 2 (U) (ELE)  Restroom  1 2 20 W F 1 (MAG)  Restroom  1 221 R F 3 (ELE)  Restroom  1 221 R F 3 (ELE)  Restroom  1 221 R F 3 (ELE)  Restroom  1 1 27 32 R F 2 (U) (ELE)  Restroom  1 27 17 R F 3 (ELE)  Restroom  1 1 32 R F 2 (ELE)  132 8 11 32 R F 2 (ELE)  133 8 11 32 R F 2 (ELE)  131 8 11 32 R F 2 (ELE)  131 8 11 32 R F 2 (ELE)  133 8 11 32 R F 2 (ELE)  135 8 11 32 R F 2 (ELE)  137 8 11 32 R F 2 (ELE)  138 8 11 32 R F 2 (ELE)  139 8 11 32 R F 2 (ELE)  139 8 11 32 R F 2 (ELE)  139 139 18 11 32 R F 2 (ELE)  141 8 11 32 R F 2 (ELE)  Hallway  16 27 32 R F 2 (U) (ELE)	F43ILL/2		90 0.7	SW	3360	2,419	8 T 59	9 R LED	RTLED38	38 38 38	0.3	C-OCC	2,352	715 1,	704 0.4 704 0.4	\$ 166.70	\$ 2,160.00		13.0
Lbrary	F43ILL/2 F43ILL/2		90 0.7	SW	3360 2016	2,419 1,633	8 T 59	9 R LED 9 R LED	RTLED38 RTLED38	38	0.3	C-000	2,352 1 411		704   0.4 150   0.5	\$ 166.70 \$ 119.28	\$ 2,160.00 \$ 2,396.25	\$ 220 5 \$ 245	13.0
Office         4         \$ 28 P F 1 (ELE)           Office         2         T 32 R F 2 (LE)           Office         2         T 32 R F 2 (LE)           Hallway         10         21 32 R F 2 (L) (ELE)           Storage         1         21 32 R F 2 (L) (ELE)           Restroom         1         2 20 W F 1 (MAG)           Restroom         1         2 17 17 R F 3 (ELE)           Restroom         2         11 32 R F 2 (ELE)           132         8         11 32 R F 2 (ELE)           130         8         11 32 R F 2 (ELE)           131         8         11 32 R F 2 (ELE)           133         8         11 32 R F 2 (ELE)           135         8         11 32 R F 2 (ELE)           137         8         17 32 R F 2 (ELE)           139         8         11 32 R F 2 (ELE)           141         8         17 32 R F 2 (ELE)           Hallway         16         21 32 R F 2 (U) (ELE)	F42LL		60 2.1	SW	2688	5.645	35 STLE	LED4	STLED4	40	1.4	C-OCC	2,688	3,763 1,	882 0.7	\$ 192.75	\$ 12,754.50	\$ 545	66.2
Hallway 10 27 32 R F 2 (u) (ELE) Storage 1 27 32 R F 2 (u) (ELE) Restroom 1 2 20 W F 1 (MAG) Restroom 1 27 13 R F 3 (ELE) Restroom 1 528 P F 1 (ELE) Restroom 2 17 32 R F 2 (ELE) 132 8 17 32 R F 2 (ELE) 133 8 17 32 R F 2 (ELE) 131 8 17 32 R F 2 (ELE) 131 8 17 32 R F 2 (ELE) 132 8 17 32 R F 2 (ELE) 131 8 17 32 R F 2 (ELE) 131 8 17 32 R F 2 (ELE) 133 8 17 32 R F 2 (ELE) 135 8 17 32 R F 2 (ELE) 136 8 17 32 R F 2 (ELE) 137 8 17 32 R F 2 (ELE) 139 8 17 32 R F 2 (ELE) 140 8 17 32 R F 2 (ELE) 141 8 17 32 R F 2 (ELE)	F41ILL		31 0.1	SW	3024	375 544	4 4 ft L	LED Tube	200732x1	15	0.1	C-OCC	2,117	127	248 0.1	\$ 24.38	\$ 850.80	\$ 80	34.9
Restroom	F43ILL/2		90 0.2	SW	3024			9 R LED	RTLED38	38	0.1	C-OCC	2,117	161	383 0.1	\$ 37.88	\$ 742.50		19.6
Restroom	FU2LL FU2LI		60 0.6	SW	4368 2688	2,621	10 2T 2	25 R LED	2RTLED	25	0.3	C-0CC	4,368	1,092 1,	529 0.4	\$ 148.71 \$ 11.43	\$ 2,295.00	\$ 170	
Restroom         1         2 T 17 R F 3 (ELE)           Restroom         1         S 28 P F 1 (ELE)           Restroom         2         1 T3 28 R F 2 (ELE)           132         8         1 T3 28 R F 2 (ELE)           130         8         1 T3 28 R F 2 (ELE)           131         8         1 T3 28 R F 2 (ELE)           133         8         1 T3 28 R F 2 (ELE)           135         8         1T3 28 R F 2 (ELE)           137         8         1T3 28 R F 2 (ELE)           139         8         1T3 28 R F 2 (ELE)           141         8         1T3 28 R F 2 (ELE)           Hallway         16         2T 32 R F 2 (U) (ELE)           Hallway         5         2T 32 R F 2 (U) (ELE)	F21SS		28 0.0	SW	2000	161 75	1 2T 2	25 R LED 7 W F 1	2RTLED F21II I	25 20	0.0	0.000	1,882	38	114 0.0 38 0.0	\$ 11.43	\$ 472.50 \$ 371.25	\$ 35	41.3 102.0
Restroom         1         S 28 P F I (ELE)           Restroom         2         173 28 F 2 (ELE)           132         8         173 28 F 2 (ELE)           130         8         173 28 F 2 (ELE)           131         8         173 28 F 2 (ELE)           133         8         173 28 F 2 (ELE)           135         8         173 28 F 2 (ELE)           137         8         173 28 F 2 (ELE)           139         8         173 28 F 2 (ELE)           141         8         173 28 F 2 (ELE)           Hallway         16         273 28 F 2 (U) (ELE)           Hallway         5         273 28 F 2 (U) (ELE)	F23ILL		47 0.0	SW	2688	126	1 2T 2	25 R LED	2RTLED	25	0.0	C-OCC	1,882	47	38 0.0 79 0.0	\$ 7.85	\$ 472.50	\$ 70	60.2
Restroom         2         11 32 R F 2 (ELE)           132         8         11 32 R F 2 (ELE)           130         8         11 32 R F 2 (ELE)           131         8         11 32 R F 2 (ELE)           133         8         11 32 R F 2 (ELE)           135         8         17 32 R F 2 (ELE)           137         8         13 32 R F 2 (ELE)           139         8         17 32 R F 2 (ELE)           141         8         17 32 R F 2 (ELE)           Hallway         16         27 32 R F 2 (U) (ELE)           Hallway         5         27 32 R F 2 (U) (ELE)	F41ILL		31 0.0	SW	2688	83	1 4 ft L	LED Tube	200732x1	25 15	0.0	C-OCC	1,882	28	55 0.0	\$ 5.48	\$ 415.20	\$ 35	60.2 75.7
130 8 1T 32 R F 2 (ELE) 131 8 1T 32 R F 2 (ELE) 133 8 1T 32 R F 2 (ELE) 135 8 1T 32 R F 2 (ELE) 137 8 1T 32 R F 2 (ELE) 139 8 1T 32 R F 2 (ELE) 139 8 1T 32 R F 2 (ELE) 141 8 1T 32 R F 2 (ELE) Hallway 16 2T 32 R F 2 (U) (ELE) Hallway 5 2T 32 R F 2 (U) (ELE)	F42LL		60 0.1	SW	2688	323	2 STLE	LED4	STLED4	40	0.1	C-OCC	1,882	151	172 0.0	\$ 16.76	\$ 983.40	\$ 50	58.7
131 8 1T 32 R F 2 (ELE) 133 8 1T 32 R F 2 (ELE) 135 8 1T 32 R F 2 (ELE) 137 8 1T 32 R F 2 (ELE) 139 8 1T 32 R F 2 (ELE) 141 8 1T 32 R F 2 (U) (ELE) 141 8 2T 32 R F 2 (U) (ELE)	F42LL F42LL		60 0.5	SW	3360 3360	1,613 1,613	8 STLE	LED4 LED4	STLED4	40 40	0.3	0.000	2,352	753	860 0.2 860 0.2	\$ 82.33 \$ 82.33	\$ 3,123.60 \$ 3,123.60	\$ 140 ) \$ 140	
133 8 1T 32 R F 2 (ELE) 135 8 1T 32 R F 2 (ELE) 137 8 1T 32 R F 2 (ELE) 139 8 1T 32 R F 2 (ELE) 141 8 1T 32 R F 2 (ELE) 141 8 1T 32 R F 2 (ELE) 141 8 1T 32 R F 2 (U(ELE) 141 8 2T 32 R F 2 (U(ELE) 141 Hallway 5 2T 32 R F 2 (U(ELE)	F42LL		60 0.5	SW		1,613		LED4 LED4	STLED4	40	0.3	0000	2,352		860 0.2	\$ 82.33	\$ 3,123.60		37.9
135 8 1T 32 R F 2 (ELE) 137 8 1T 32 R F 2 (ELE) 139 8 1T 32 R F 2 (ELE) 141 8 1T 32 R F 2 (ELE) Hallway 16 2T 32 R F 2 (U) (ELE) Hallway 5 2T 32 R F 2 (U) (ELE)	F42LL		60 0.5	SW	3360 3360	1,613	8 STLE	LED4	STLED4	40	0.3	C-OCC	2,352		860 0.2	\$ 82.33	\$ 3,123.60		37.9
141 8   11 32 R F 2 (ELE) Hallway 16 2T 32 R F 2 (U) (ELE) Hallway 5 2T 32 R F 2 (U) (ELE)	F42LL		60 0.5	SW	3360	1,613	8 STLE	LED4	STLED4	40 40	0.3	C-OCC	2,352		860 0.2	\$ 82.33	\$ 3,123.60	\$ 140	37.9
141 8   11 32 R F 2 (ELE) Hallway 16 2T 32 R F 2 (U) (ELE) Hallway 5 2T 32 R F 2 (U) (ELE)	F42LL		60 0.5	SW	3360	1,613	8 STLE	LED4	STLED4	40	0.3	C-OCC	2,352	753	860 0.2	\$ 82.33	\$ 3,123.60	\$ 140	37.9
Hallway 16 2T 32 R F 2 (u) (ELE) Hallway 5 2T 32 R F 2 (u) (ELE)	F42LL F42LL		60 0.5 60 0.5	SW	3360 3360	1,613 1,613	8 STLE	LED4 LED4	STLED4 STLED4	40 40	0.3	C-00C	2,352	753	860 0.2 860 0.2	\$ 82.33 \$ 82.33	\$ 3,123.60 \$ 3,123.60	) \$ 140 ) \$ 140	37.9 37.9
Hallway 5 2T 32 R F 2 (u) (ELE)	F42LL FU2LL		60 1.0	SW	4368	4,193		25 R LED	2RTLED	25	0.3	C-0CC	4,368	1.747 2.	446 0.6	\$ 237.93	\$ 3,123.60	\$ 260	
Exterior Lights 17 MH 100	FU2LL		60 0.3	SW	4368	1,310	5 2T 2	25 R LED	2RTLED	25	0.1	C-OCC	4,368	546	764 0.2	\$ 74.35	\$ 1,282.50	\$ 95	17.2
	MH100/1		128 2.2	Breaker	4032	8,774	17 FXLE	LED39	FXLED39/1	39	0.7	NONE	4,032		100 1.5	\$ 597.59	\$ 9,455.40	\$ 850	
Exterior Lights 2 QL85/1	QL85/1		85 0.2	Breaker	4032	685 3,693	2 QL85	85/1	QL85/1	85	0.2	NONE	4,032	685	- 0.0	S -	s -	\$ -	
Exterior Lights 2 WP400MH1 Steelium Pala Lights 10 MH4000 First	MH400/1 MH1000/1		458 0.9	Breaker	4032			PLED2T78	WPLED2T78	91	0.2	NONE	4,032		959 0.7	\$ 289.91	\$ 2,048.38	\$ 200	7.1
Stadium Pole Lights         10         MH1000 Fixt           Stadium Pole Lights         12         MH1000 Fixt	MH1000/1 MH1000/1		1080 10.8	Breaker Breaker	4032	43,546 52,255		11000 Fixt 11000 Fixt	MH1000/1 MH1000/1	1080 1080	10.8	NONE NONE		43,546 52,255	- 0.0	\$ .	\$ -	\$ -	.+'
Occident to a cigillo	WILLIOOUT		.000 13.0	Dioand	7032	32,230	12 WHI	11000 1 100	MITTOOUT	1000	13.0		#N/A	ve,evv	0.0	I	<u> </u>		<b>+</b>
													#N/A						
1,582			149.3			521,055	1,582				93.1		287	,939	56.2	22,778		\$31,260	
	<u> </u>													Demand Savings kWh Savings		56.2 233,116	\$2,031 \$20,747		

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## APPENDIX D

# **New Jersey Board of Public Utilities Incentives**

- i. Smart Start
- ii. Direct Install
- iii. Pay for Performance (P4P)
- iv. Energy Savings Improvement Plan (ESIP)

# I. SMART START



NJ SMARTSTART BUILDINGS

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### **NJ SmartStart Buildings**

### **Program Updates** Notice of Fiscal Year 2016 Program

#### Other updates posted.

Changes

#### **Program Overview**



#### **Program Literature**



## APPLICATION FORMS TOOLS AND RESOURCES

**EQUIPMENT INCENTIVES** 

FOOD SERVICE EQUIPMENT

### PAY FOR PERFORMANCE

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#### With New Jersey SmartStart Buildings ...

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

 ${\it New Jersey SmartStart Buildings can provide a range of support -- at no cost to you -- to yield}$ substantial energy savings, both now and for the future. Learn more about:

- Project Categories
- SmartStart Applications
- Program Terms and Conditions
- Find a Trade Ally

#### Incentives for Qualifying Equipment and Projects

Financial incentives are available for size projects which can offset some - or maybe even all - of the added cost to purchase qualifying energy-efficient equipment.

#### Support for Custom Energy-Efficiency Measures

Custom measures gives you the opportunity to receive an incentive for unique energy-efficiency measures that are not on the prescriptive equipment list, but are new/innovative or project/facility

#### **Application and Eligibility Process**

We have made it even easier to participate! Pre-approval is no longer required for prescriptive measures, with the exception of prescriptive & performance lighting and lighting controls. Please note that anyone who purchases and installs equipment without Market Manager approval does so at his/her own risk.

#### **Success Stories**



#### **Local Govt and Schools**



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#### **Equipment Incentives**

More reasons for a smart start on your next project!

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

#### **Application and Eligibility Process**

For all Prescriptive measures with the exception of Prescriptive & Performance Lighting and Lighting Controls, pre-approval is not required prior to installation, however any customer and/or agent who purchases and installs equipment without Market Manager approval does so at their own risk

Eligibility: in order to be eligible for program incentives, a customer, or an agent

(contractor/vendor) authorized by a customer, must submit a properly completed application package. A complete application package should include:

- Completed application forms signed by the customer
- Manufacturer specification sheets and supporting documentation of qualifications.
- Recent copy of a full utility bill from a participating utility (gas or electric depending on technology) showing societal benefits charge
  - O Name of the customer listed on the application must match the name of the customer listed on the utility bill.
  - For new construction projects where a utility account has not yet been established, the customer will be required to submit a utility bill prior to incentive payment however it does not need to be included with the initial application submission.
- W-9 form completed for incentive payee.

For completed projects that do not require program pre-approval (excluding Prescriptive Lighting, Prescriptive Lighting Controls, Performance Lighting and Custom Measures) the application must be submitted to the Market Manager within 12 months of equipment purchase. Sufficient documentation must be provided confirming the date of equipment purchase (material invoice, purchase order, etc.), Customers may choose to submit additional documentation to allow the program to process payment including a valid Tax Clearance Certificate for the customer (see tax clearance requirements) and final invoice documentation. All projects are subject to post-inspection to confirm equipment installation prior to payment.

Pre-Inspections: the Market Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of lighting, lighting control equipment and custom measures. This will be done prior to the issuance of the approval letter. Work must not begin prior to formal program approval.

Tax Clearance Requirements: the name of the customer listed on the certificate must match the customer name listed on the utility bill and application. In addition, the customer tax ID listed on the application must agree with the tax ID on the Certificate. Certificates are valid for 180 days and must be valid on the date the Market Manager signs off on the incentive

Utility account: Each utility account requires a complete, separate application, Projects for the same utility account that are being done at the same time must be submitted on one application. Applications for measures that are self-installed by customers must be signed by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentive to the sales vendor. This application package must be received by the Market Manager on or before June 30, 2016 in order to be eligible for the fiscal year program (July 1, 2015 - June 30, 2016) incentives.

Expirations: Pre-approved projects are given a one year approval in which the proposed measure is to be installed and operational. When a project has expired the customer will have 30 days to either submit a request for an extension OR submit final project paperwork Extension requests must be in writing from the customer and include the circumstances that led to the extension request, and the percentage of the project completed. Extension requests may be granted for a period no longer than six (6) months. The Market Manager may provide up to two, six month extensions from the original approval expiration date. If the project has not started and the applicant is still interested in installing the equipment, the existing application will be cancelled and a new application must be submitted and approved

### **Program Updates**

Notice of Fiscal Year 2016 Program Changes

Other updates posted.

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prior to installation. The incentive amount will be based upon the program guidelines in effect at the time of the new submission. If no response is received within 30 days of expiration the project will be cancelled.

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

**Electric Chillers** 

**Gas Cooling** 

**Electric Unitary HVAC** 

**Ground Source Heat Pumps** 

Gas Heating

Variable Frequency Drives

Gas Water Heating

Prescriptive lighting Application

**Lighting Controls** 

Performance Lighting

Refrigeration Doors

**Refrigeration Controls** 

Food Service Equipment

Refrigerator/Freezer Motors

**Custom Measures** 

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

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# II. DIRECT INSTALL



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#### **Direct Install**

# NEW JERSEY'S CLEAN ENERGY PROGRAM **DIRECT** Install

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

Sometimes, the biggest challenge to improving energy efficiency is knowing where to start and how to get through the process. Created specifically for existing small to medium-sized facilities, Direct Install is a turnkey solution that makes it easy and affordable to upgrade to high efficiency equipment. Direct Install is designed to cut your facility's energy costs by replacing lighting, HVAC and other outdated operational equipment with energy efficiency alternatives. The program pays up to 70% of retrofit costs, dramatically improving your payback on the project. There is a \$125,000 incentive cap on each project.

#### **ELIGIBILITY**



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

#### **SYSTEMS & EQUIPMENT** ADDRESSED BY THE PROGRAM

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

Measures eligible for Direct Install are limited to specific equipment categories, types and capacities. Boilers may not exceed 1,500,000 Btuh and furnaces may not exceed 140,000 Btuh. Limitations on packaged HVAC, motors and other equipment also apply. Larger capacity equipment may be eligible for financial incentives through NJ SmartStart Buildings.

See how other small businesses owners have saved!

#### BENEFITS OF DIRECT INSTALL



Turnkey Process - A network of selected participating contractors address your project from start to finish, beginning with an assessment of your facility, and ending with the installation of eligible energy-efficient equipment.

Minimal Cost - Your share of the project's cost will be approximately 30%, the program pays the remaining 70%. With incentives so dramatic, your upgrade project can very quickly pay for itself.

Fast Turnaround Time - Project installations are typically completed within 90 days from the time of scheduling your energy assessment.

Ongoing Savings - Your new energy-efficient equipment will provide savings for years to come through dramatically reduced energy costs on your monthly utility bills.

**Program Updates** 

Notice of Fiscal Year 2016 Program Changes

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# III. PAY FOR PERFORMANCE (P4P)



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#### Pay for Performance



Pay for Performance is a comprehensive energy efficiency program that provides incentives towards whole-building energy improvements. Choose the component that best describes your

**Program Participants** 

#### **EXISTING BUILDINGS**



The Existing Buildings component is designed for commercial and industrial buildings with a peak demand in excess of 200 kW in any of the preceding twelve months, and 100kW for select multifamily buildings. Save 15% or more on the energy consumption in your buildings with the help of our approved partners and receive incentives along the way.

## **NEW CONSTRUCTION**

The New Construction component is designed for new commercial, industrial, and multifamily buildings with 50,000 square feet or more of planned space, as well as buildings undergoing substantial renovation. Construct your building to achieve energy costs 15% below the current energy code with the help of our approved partners and receive incentives.



**Program Updates** Notice of Fiscal Year 2016 Program Changes

Other updates posted.

#### **Program Literature**



Applications and Brochures Download the Latest Program Materials

#### **Success Stories**



#### **Local Govt and Schools**



**Find out what** financial incentives are available today!

#### **Business Energy Advisor**



Learn more about energy use & savings in your industry

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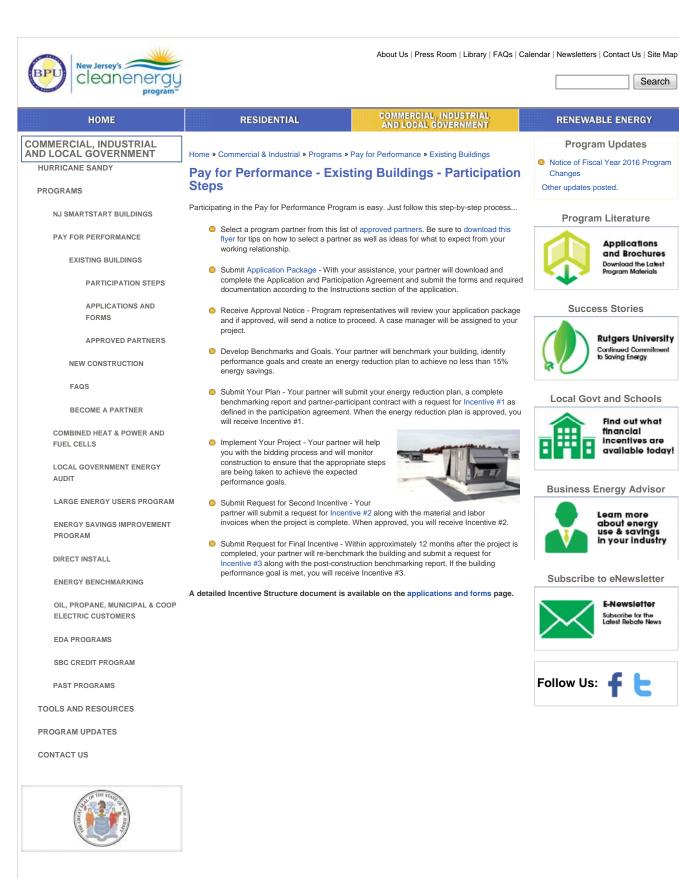


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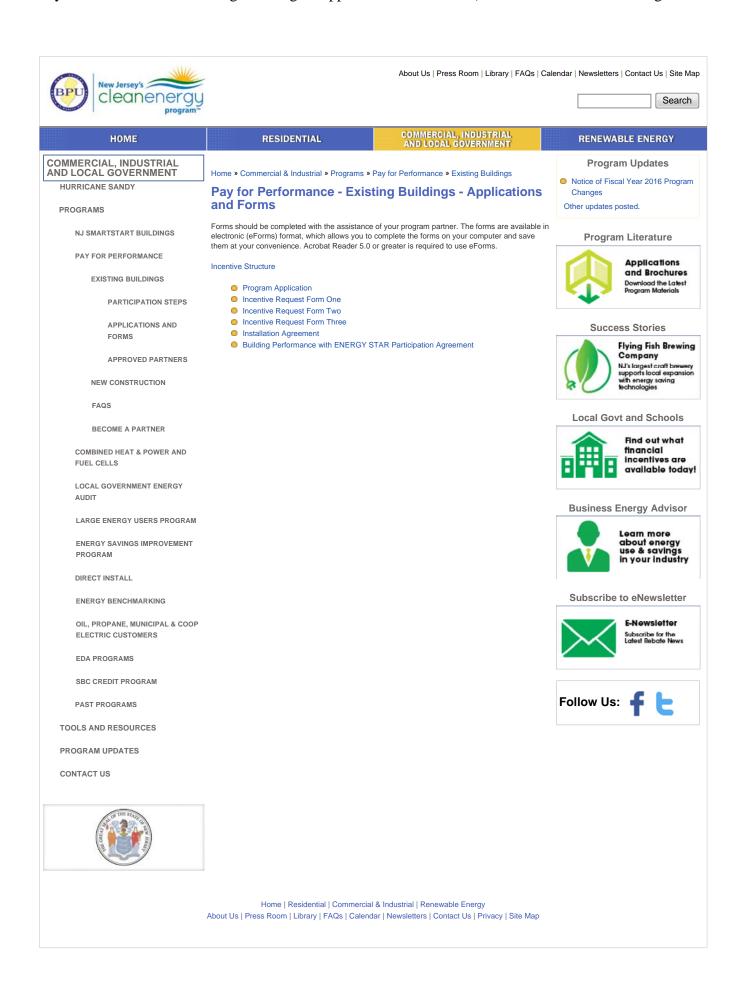
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How did you learn about this Energy Efficiency Program?					
■ Advertisement	☐ Internet Search	■Mailer	■ Video		
■ Tradeshow/Event	☐ Word of Mouth	■ Radio	Contractor		
Other					

# PAY FOR PERFORMANCE APPLICATION FORM

July 1, 2015 – June 30, 2016

Utility Serving Applicant:  ☐ New Jersey Natural Gas ☐ Other Electric Service Pro ☐ Other Fuel Provider:	□ Eli vider (p		□Ro	ckla	Central P nd Electri _	ic Co.		□ PSE&G □ South Jersey Gas
Instructions								
1. Read the Participation Agreement (pages 3, 2. Fill out all applicable spaces on this form. No must be listed for the utility rate payer of the 3. Provide a copy of the customer's company 1. Provide the most recent (within 2 years) confutility bills for the project for all account order and separated by account. Utilize Utaccounts to organize data.	lote Custom e Project face W-9 form. nsecutive 12 es, organized	er/Owner Information cility. 2 month period l in chronological	and/or s 6. Partner the Mar Approval Scope of s	must a ket M of this	nditions. submit the ap lanager – see s Application s only appro	plication pack back of this for is not an apposed upon app	kage via e-mail, orm. proval of the p	r unusual circumstances mail or fax DIRECTLY to roject's scope of work. nergy Reduction Plan. See n.
Customer/Owner Ir	ıforn	nation (payment	will be	ma	de to en	tity ente	red here)	
Company Name					Project Con	tact/Title		
Company Address			City			S	State	Zip
Phone/Fax	E-mail				Fe	ederal ID/SSI	N	NAICS Code
Partner Informatio	n							
Company Name					Project Co	ontact/Title		
Company Address			City	y			State	Zip
Phone	Fax		E-m	nail				
Project Information	n							
Project Name								
Building Address			Cit	у			State	Zip
Utility Account Number(s): Electric				(	Gas			
° Note: Please use the back of this page for additional	utility accoun		t.				1	
Annual Peak kW Demand		Building Type		Number of Buildings				Buildings
Size of Building(s) (gross sq/ft)			Dir	ect, M	aster or Sub l	Metered		
Funding								
☐ Check the box if an Energy Savings Improvement Program (ESIP) will be a source of funding. ESIP allows government agencies to pay for energy related improvements using the value of the resulting energy savings.								
Do you expect to receive funding under any other efficiency programs? $\square$ No $\square$ Yes $\square$ Yes, please specify below:								
Utility Program – Utility:				Program Name:				
Federal Program – Organization:	:		Program Name:					
Other Program – Organization:			Pr	Program Name:				

<b>Additional Project informati</b>	ion
Additional Utility Account(s)	
Account type	Account number
Additional Comments:	

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

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

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

# **Pay For Performance-Existing Buildings**

## **Participation Agreement**

Definitions:

ADMINISTRATOR - New Jersey Board of Public Utilities (NJBPU)

APPLICATION PROCESS - The Program pays incentives in phases upon satisfactory completion of each of three Program milestones - approval of a complete Energy Reduction Plan, installation of all recommended measures per the Energy Reduction Plan, completion of Post-Construction Benchmarking Report (for incentive amounts, please refer to Incentive Amounts). In order to be eligible for Program Incentives, a Participating Customer or an agent authorized by a Customer, must submit to the Market Manager a properly completed application package application form, Participating Customer's company W-9, twelve consecutive months of the project's utility bills and executed Participation Agreement. All components of the application package must be filled out completely, truthfully and accurately. This application package must be received on or before June 30, 2016 in order to be eligible for the Fiscal Year 2016 Incentives. The Market Manager will review the application package to determine if the project is eligible for a Program Incentive. When approved, the Participating Customer will receive an approval letter from their Case Manager with the estimated authorized first incentive amount and the date by which the Energy Reduction Plan must be submitted. Upon receipt of the approval letter, the Participating Customer and Partner may proceed with work on the Energy Reduction Plan. The Market Manager or agent thereof reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the Energy Reduction Plan approval letter. Approval of this Application is not an approval of the project's scope of work. Scope of work is only approved upon approval of the Energy Reduction Plan. See application and program guidelines for more information.

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

ELIGIBILITY - Program Incentives are available to existing commercial and industrial buildings with peak kilowatt demand usage of more than 200 kW in any of the most recent preceding twelve months of utility bills, 100 kW for multifamily buildings, and a customer of the New Jersey Utilities. Market Manager has the discretion to approve applications that fall below the 200 kW minimum, 100 kW for multifamily, by no more than 10%. If the Participant is a municipal electric company customer, and a customer of an investor-owned gas New Jersey Utility, only gas measures will be eligible for incentives under the Program. Similarly, if the Participant is an oil/propane customer and a customer of an investor-owned electric New Jersey Utility, only electricity measures will be eligible for incentives under the Program.

Projects may not participate or apply for incentives for energy efficient measures through other New Jersey's Clean Energy Programs while participating in this Program. Equipment procured by participating Customer through another program offered by New Jersey Utilities, as applicable, is not eligible for incentives through this Program. Customers who, from July 1, 2014 - June 30, 2015, have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility, may not be eligible for incentives offered through this program.

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

ENERGY-EFFICIENT MEASURES – Any device eligible to receive a Program Incentive payment through the New Jersey's Clean Energy Commercial and Industrial Program

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

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

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

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

INCENTIVE CAP – Program Incentives #2 and #3 will be capped not to exceed 50% of the total project cost, lesser of estimated or actual. Incentive #1 will be capped not to exceed 50% of the project's annual energy cost. Program Incentives (Incentive #1, #2 and #3) are restricted to \$1M per gas and electric account (limited to \$2M per project) in a program year. Campus style facilities, which are mastered-metered, are subject to the annual incentive cap of \$1 million per gas and electric account. The Participating Customer will also be subject to an annual Entity Cap of \$4M or \$5M if a Combined Heat and Power/Fuel Cell Application is approved for the same facility (Definition of an Entity can be found in the Board Order Docket No. EO07030203).

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

LIMITATION OF LIABILITY – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against TRC Energy Services, the Market Manager, and the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Market Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Market Manager, its representatives, or subcontractors, or the Administrator be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Market Manager under this Program shall be individual, and not joint and/or several

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

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

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

Upon review of the submittal package (by the Market Manager or agent thereof), the remaining 50% of the total performance-based incentive (Incentives #2 & #3) will be released to the Participating Customer. If the Post-Construction Benchmarking Report indicates that the project did not meet the minimum performance target, the post-installation completion period may be extended to up to twenty-four months subsequent to the Incentive Payment #2 package approval date. If after this time the minimum performance target is still not met, the final Incentive #3 will not be paid.

NEW JERSEY UTILITIES – The investor-owned electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

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

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

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

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

PERFORMANCE TARGET - A minimum of a 15% annual source energy savings must be achieved in order to participate. The performance target is based on reducing the total energy consumption for the facility. No more than 50% of the total source energy savings may be derived from lighting measures; up to 70% lighting savings may be considered but performance target will increase by 1% for each percent over 50% (e.g. project with 60% savings from lighting will have a minimum performance target of 25%). A 4% performance target may be offered to customers whose annual energy consumption is heavily weighted to manufacturing and process loads, as well as hospitals. This approach will be reviewed on a case-by-case basis and must be preapproved by the Market Manager. In order to be considered, the project must involve: A manufacturing facility, including such industries as plastics and packaging, chemicals, petrochemicals, metals, paper and pulp, transportation, biotechnology, pharmaceutical, food and beverage, mining and mineral processing, general manufacturing, equipment manufacturers and data centers; and manufacturing and/or process-related loads, including data center consumption, consume 50% or more of total facility energy consumption. For hospitals, 50% or more of the gross floor area must be used for general medical and surgical services and 50% or more of the licensed beds must provide acute care services. The total energy savings may not come from a single measure. No more than 50% of the total source energy savings may be derived from non-investor owned utilities or fuels.

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

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

PRE-INSTALLED MEASURES - An Energy Reduction Plan must be approved by the program and an approval letter sent to the customer in order for incentives to be committed. Upon receipt of an Energy Reduction Plan, all project facilities must be pre-inspected. Measures installed prior to pre-inspection of the facility shall not be included as part of the ERP scope of work and will not be eligible for incentive

Measure installation undertaken prior to ERP approval, but after pre-inspection, is done at the customer's own risk. In the event that an Energy Reduction Plan is rejected by the program, the customer will not receive any incentives.

PRODUCT INSTALLATION OR EQUIPMENT INSTALLATION – Installation of the Energy-Efficient Measures. Projects with a contract threshold of \$15,444 are required to pay no less than prevailing wage rate to workers employed in the performance of any construction undertaken in connection with Board of Public Utilities financial assistance, or undertaken to fulfill any condition of receiving Board of Public Utilities financial assistance, including the performance of any contract to construct, renovate or otherwise prepare a facility, the operations of which are necessary for the receipt of Board of Public Utilities financial assistance. By submitting an application, or accepting program incentives, applicant agrees to adhere to New Jersey Prevailing Wage requirements, as applicable.

PROGRAM – New Jersey's Clean Energy Pay for Performance Program offered herein by the New Jersey Board of Public Utilities pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

 $\label{eq:program} PROGRAM\ GUIDELINES-See\ Pay\ for\ Performance\ Program\ Guidelines\ available\ from\ your\ Partner.$ 

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

PROGRAM OFFER – The Program covers products purchased and/or services rendered on or after July 1, 2015.

 $PROJECT-A\ commercial\ or\ industrial\ existing\ building\ with\ peak\ demand\ in\ excess\ of\ 200\ kW\ in\ any\ of\ the\ most\ recent\ preceding\ twelve\ months\ of\ electric\ usage,\ 100\ kW\ for\ multifamily\ buildings.\ Multifamily\ building(s)\ must\ be\ four\ (4)\ stories\ or\ greater\ or\ three\ (3)\ stories\ and\ under\ having\ central\ heating,\ cooling,\ or\ metering\ serving\ more\ than\ one\ building.\ Refer\ to\ Multifamily\ Decision\ Tree.$ 

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

TAX LIABILITY – The Market Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their federal tax identification number or social security number on the application form in addition to providing a copy of their W-9 form as part of the application package in order to receive a Program Incentive.

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

WARRANTIES – THE MARKET MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

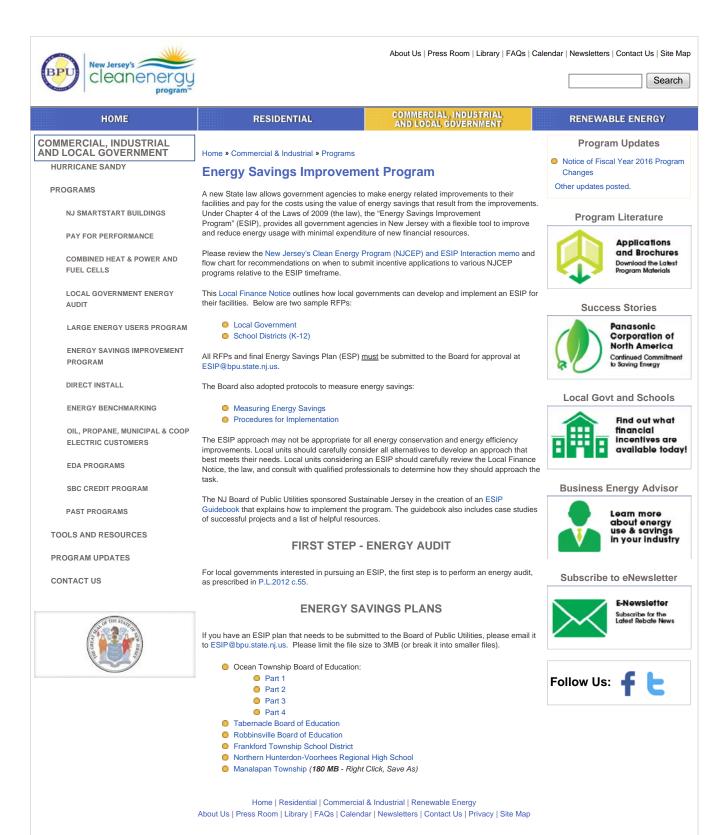
ACKNOWLEDGEMENT – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Market Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the Pay For Performance Program, including the release of electric and natural gas utility billing information, as well as make available to the public non-sensitive information. I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program. This arrangement supersedes all other communications and representations.

#### CUSTOMER'S SIGNATURE

#### PARTNER SIGNATURE

By signing, I certify that I have read, understand and agree to the Participation Agreement listed above.

IV. ENERGY SAVINGS IMPROVEMENT PLAN (ESIP)





#### Carteret Board of Education Carteret High School

Cost of Electricity	\$0.150	/kWh
Electricity Usage	256,240	kWh/yr
System Unit Cost	\$4,000	/kW

#### Photovoltaic (PV) Solar Power Generation - Screening Assessment

Budgetary	Annual Utility Savings			Estimated	Total	Federal Tax	New Jersey Renewable	Payback (without	Payback (with	
Cost				Maintenance	Savings	Credit	** SREC	incentive)	incentive)	
					Savings					
\$	kW	kWh	therms	\$	\$	\$	\$	\$	Years	Years
\$480,000	120.0	79,455	0	\$11,918	0	\$11,918	\$0	\$13,507	40.3	18.9

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

Area Output\*

2,305 m2 24.811 ft2

Perimeter Output\*

177 m 581 ft

Available Roof Space for PV:

(Area Output - 10 ft x Perimeter) x 85%

16,147 ft2

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

8 watt/ft2 129,179 DC watts

120 kW Enter into PV Watts

PV Watts Inputs\*\*\*

Array Tilt Angle 20 pitched - enter estimated roof angle)

Array Azimuth 180 Enter into PV Watts (always 20 if flat, if pitched - enter estimated roof angle)

Zip Code O7008 Enter into PV Watts OC/AC Derate Factor 0.83 Enter info PV Watts

**PV Watts Output** 

79,455 annual kWh calculated in PV Watts program

% Offset Calc

Usage 256,240 (from utilities)

PV Generation 79,455 (generated using PV Watts )

% offset 31%

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

\*\* http://www.flettexchange.com\_

http://gisatnrel.nrel.gov/PVWatts\_Viewer/index.html



PVWatts Calculator Page 1 of 2



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

Disclaimer: The PVWatts® Model ("Model") is provided by the National Renewable Energy Laboratory ("NREL"), which is operated by the Alliance for Sustainable Energy, LLC ("Alliance") for the U.S. Department Of Energy ("DOE") and may be used for

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## **RESULTS**

# 152,986 kWh per Year \*

Month	Solar Radiation ( kWh / m <sup>2</sup> / day )	AC Energy ( kWh )	Energy Value (\$)
January	2.78	9,035	667
February	3.52	10,223	754
March	4.34	13,592	1,003
April	4.95	14,478	1,069
May	5.69	16,709	1,233
June	5.86	16,229	1,198
July	5.73	16,199	1,196
August	5.47	15,332	1,131
September	4.91	13,695	1,011
October	3.99	11,896	878
November	2.68	8,082	596
December	2.35	7,516	555
nnual	4.36	152,986	\$ 11,291

#### **Location and Station Identification**

Requested Location	199 washington avenue, carteret, nj
Weather Data Source	(TMY2) NEWARK, NJ 9.7 mi
Weather Data Source	(IMIZ) NEWARK, NJ 5.7 IIII
Latitude	40.7° N
Longitude	74.17° W

#### **PV System Specifications** (Commercial)

DC System Size	120 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	180°
System Losses	14%
Inverter Efficiency	96%
DC to AC Size Ratio	1.1

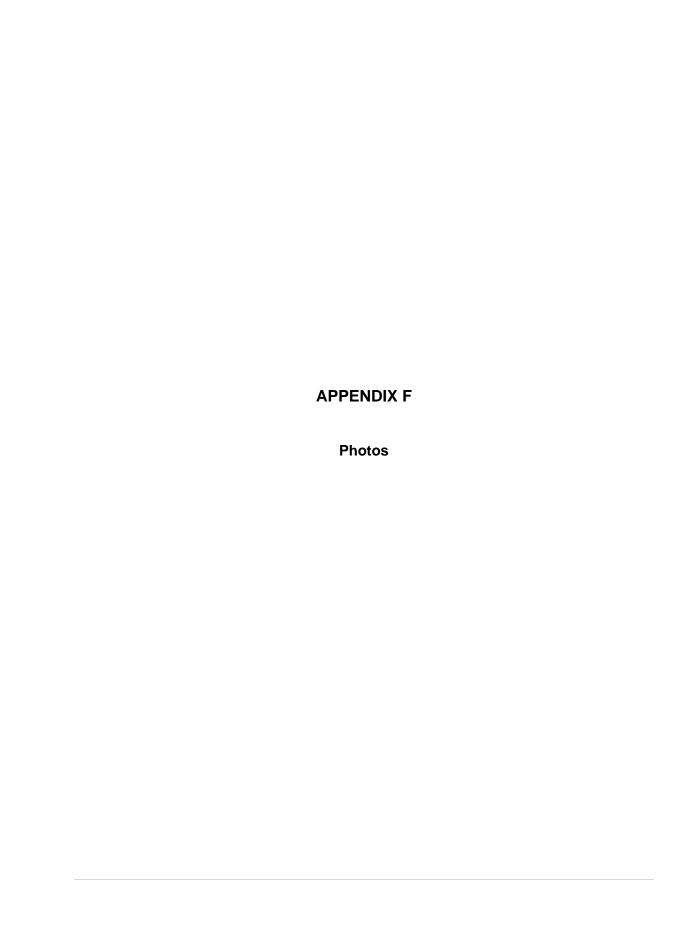
#### **Initial Economic Comparison**

from Utility	0.07 \$/kWh
Initial Cost	2.60 \$/Wdc
Cost of Electricity Generated by System	0.13 \$/kWh

#### Selected Incentives

Capacity Based Incentives (CBI)	New Jersey Renewable Energy Incentive Program Rate: \$0.75 - Maximum Amount: \$5,625.00
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These values can be compared to get an idea of the cost-effectiveness of this system. However, system costs, system financing options (including 3rd party ownership) and complex utility rates can significantly change the relative value of the PV system.





1: Carteret High School



2: Cleaver Brooks steam boilers



2: Steam-to-hot water generator



4: AAON unit serving the Cafeteria



5: Kitchen MAU unit and associated ductwork





# **ENERGY STAR<sup>®</sup> Statement of Energy Performance**

## **Carteret High School**

**Primary Property Function:** K-12 School

Gross Floor Area (ft²): 157,745

**Built:** 1962

**ENERGY STAR®** 

For Year Ending: April 30, 2015 Date Generated: June 05, 2015

Score <sup>1</sup>	- Juio	Concratour Same So	, 2010		
The ENERGY STAR score is climate and business activity.		ent of a building's energy	efficiency as compared	l with similar buildings nation	wide, adjusting for
Property & Contact Inf	formation				
Property Address Carteret High School 199 Washington Ave Carteret, New Jersey 070 Property ID: 4439003	08	Property Owner	-	Primary Contact	
Energy Consumption	and Energy Us	se Intensity (EUI)			
50.4 kBtu/ft2 Natura		el 6,685,090 (84%) 1,262,699 (16%)	National Median Comparison National Median Site EUI (kBtu/ft²) 89.2 National Median Source EUI (kBtu/ft²) 123.3 % Diff from National Median Source EUI -44% Annual Emissions Greenhouse Gas Emissions (Metric Tons 524 CO2e/year)		
Signature & Stamp	of Verifying	g Professional			
I(	Name) verify that	t the above information	is true and correct to	o the best of my knowledge	Э.
Signature: Licensed Professional		Date:			
			Professior (if applical	nal Engineer Stamp	

(if applicable)