Local Government Energy Audit:
Energy Audit Report

High School South

346 Clarksville Rd

West Windsor Township, New Jersey

08550

West Windsor-Plainsboro Regional School District

March 22, 2019

Final Report by:

TRC Energy Services

Disclaimer

The goal of this audit report is to identify potential energy efficiency opportunities, help prioritize specific measures for implementation, and provide information about financial incentives that may be available. Most energy conservation measures have received preliminary analysis of feasibility that identifies expected ranges of savings and costs. This level of analysis is usually considered sufficient to establish a basis for further discussion and to help prioritize energy measures.

TRC Energy Services (TRC) reviewed the energy conservation measures and estimates of energy savings were reviewed for technical accuracy. Actual, achieved energy savings depend on behavioral factors and other uncontrollable variables and, therefore, estimates of final energy savings are not guaranteed. TRC and the New Jersey Board of Public Utilities (NJBPU) shall in no event be liable should the actual energy savings vary.

TRC bases estimated installation costs on our experience at similar facilities, pricing from local contractors and vendors, and/or cost estimates from RS Means. We encourage the owner of the facility is encouraged to independently confirm these cost estimates and to obtain multiple estimates when considering measure installations. Actual installation costs can vary widely based on individual measures and conditions. TRC and NJBPU do not guarantee installed cost estimates and shall in no event be held liable should actual installed costs vary from estimates.

The New Jersey Clean Energy Program (NJCEP) incentive values provided in this report are estimates based on program information available at the time of the report. Incentive levels are not guaranteed. The NJBPU reserves the right to extend, modify, or terminate programs without prior notice. Please review all available program incentives and eligibility requirements prior to selecting and installing any energy conservation measures.

The customer and their respective contractor(s) are responsible to implement energy conservation measures in complete conformance with all applicable local, state and federal requirements.

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1 EXECUTIVE SUMMARY

The New Jersey Board of Public Utilities (NJBPU) has sponsored this Local Government Energy Audit (LGEA) Report for High School South.

The goal of a LGEA report is to provide you with information on how your facility uses energy, identify energy conservation measures (ECMs) that can reduce your energy use, and provide information and assistance to help facilities implement ECMs. The LGEA report also contains valuable information on financial incentives from New Jersey's Clean Energy Program (NJCEP) for implementing ECMs.

This study was conducted by TRC Energy Services (TRC) as part of a comprehensive effort to assist New Jersey public schools in controlling energy costs and protecting our environment by offering a wide range of energy management options and advice.

1.1 Facility Summary

High School South is a 270,372 square foot facility comprised of various space types including classrooms, offices, dining rooms, two gymnasiums, locker rooms, a commercial kitchen, a theater, a pool, a media center, a playhouse, and various storage and mechanical spaces.

Lighting at High School South consists of fluorescent and HID lighting fixtures. Heating for most of the building is supplied by condensing hot water boilers. Cooling is supplied by a mixture of rooftop units with direct expansion cooling components, split-system air conditioners, a chiller system, and mini-split ductless air conditioners. A thorough description of the facility and our observations are located in Section 2.

1.2 Your Cost Reduction Opportunities

Energy Conservation Measures

TRC evaluated 13 measures and recommends 10 measures which together represent an opportunity for High School South to reduce annual energy costs by roughly $182,725 and annual greenhouse gas emissions by 1,542,263 lbs. CO_2e. We estimate that if all measures were implemented as recommended, the project would pay for itself in 3.3 years. The breakdown of existing and potential utility costs after project implementation are illustrated in Figure 1 and Figure 2, respectively. Together these measures represent an opportunity to reduce High School South's annual energy use by 19%.

Figure 1 – Previous 12 Month Utility Costs

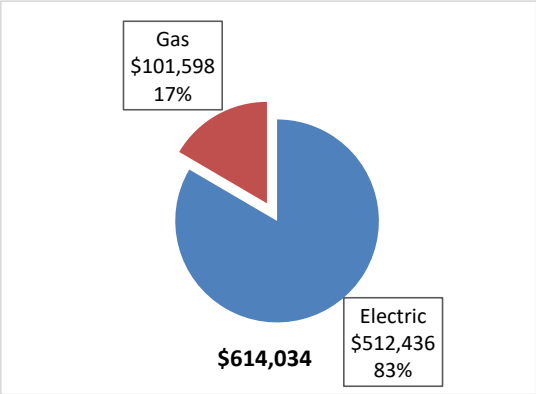
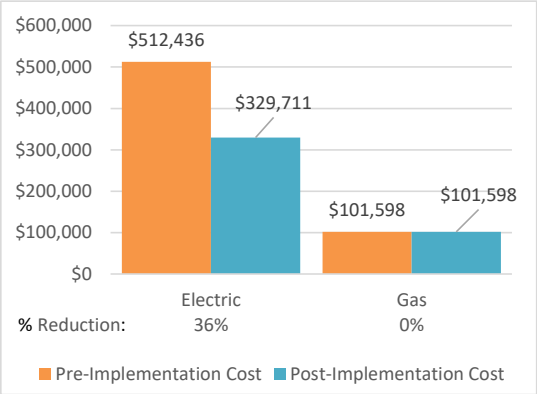


Figure 2 – Potential Post-Implementation Costs



A detailed description of High School South's existing energy use can be found in Section 3.

Estimates of the total cost, energy savings, and financial incentives for the proposed energy efficient upgrades are summarized below in Figure 3. A brief description of each category can be found below and a description of savings opportunities can be found in Section 4.

Figure 3 – Summary of Energy Reduction Opportunities

Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**1,108,797**	**163.3**	**0.0**	**$132,287.25**	**$359,431.30**	**$54,575.00**	**$304,856.30**	**2.3**	**1,116,550**
ECM 1	Install LED Fixtures	Yes	566,544	73.5	0.0	$67,592.66	$202,069.80	$16,290.00	$185,779.80	2.7	570,505
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	129	0.1	0.0	$15.37	$206.32	$30.00	$176.32	11.5	130
ECM 3	Retrofit Fixtures with LED Lamps	Yes	542,124	89.7	0.0	$64,679.22	$157,155.18	$38,255.00	$118,900.18	1.8	545,915
Lighting Control Measures			**134,095**	**19.6**	**0.0**	**$15,998.48**	**$79,955.00**	**$15,915.00**	**$64,040.00**	**4.0**	**135,033**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	85,118	13.9	0.0	$10,155.21	$62,155.00	$7,025.00	$55,130.00	5.4	85,713
ECM 5	Install High/Low Lighitng Controls	Yes	48,977	5.7	0.0	$5,843.27	$17,800.00	$8,890.00	$8,910.00	1.5	49,319
Motor Upgrades			**915**	**0.2**	**0.0**	**$109.22**	**$8,808.36**	**$0.00**	**$8,808.36**	**80.6**	**922**
ECM 6	Premium Efficiency Motors	Yes	915	0.2	0.0	$109.22	$8,808.36	$0.00	$8,808.36	80.6	922
Variable Frequency Drive (VFD) Measures			**77,592**	**7.9**	**0.0**	**$9,257.25**	**$23,199.25**	**$0.00**	**$23,199.25**	**2.5**	**78,134**
ECM 7	Install VFDs on Chilled Water Pumps	Yes	53,592	5.5	0.0	$6,393.85	$15,583.35	$0.00	$15,583.35	2.4	53,966
ECM 8	Install VFDs on Hot Water Pumps	Yes	24,000	2.5	0.0	$2,863.40	$7,615.90	$0.00	$7,615.90	2.7	24,168
Electric Chiller Replacement			**206,931**	**82.2**	**0.0**	**$24,688.36**	**$229,039.18**	**$21,748.80**	**$207,290.38**	**8.4**	**208,378**
ECM 9	Install High Efficiency Chillers	Yes	206,931	82.2	0.0	$24,688.36	$229,039.18	$21,748.80	$207,290.38	8.4	208,378
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**84.2**	**$700.86**	**$49,427.82**	**$2,153.00**	**$47,274.82**	**67.5**	**9,857**
	Install High Efficiency Hot Water Boilers	No	0	0.0	38.2	$317.67	$14,762.10	$1,353.00	$13,409.10	42.2	4,468
	Install High Efficiency Furnaces	No	0	0.0	46.0	$383.19	$34,665.72	$800.00	$33,865.72	88.4	5,389
Food Service Equipment & Refrigeration Measures			**107**	**0.0**	**0.0**	**$12.72**	**$1,037.21**	**$100.00**	**$937.21**	**73.7**	**107**
	Refrigeration Controls	No	107	0.0	0.0	$12.72	$1,037.21	$100.00	$937.21	73.7	107
Plug Load Equipment Control - Vending Machine			**3,224**	**0.0**	**0.0**	**$384.61**	**$460.00**	**$0.00**	**$460.00**	**1.2**	**3,246**
ECM 10	Vending Machine Control	Yes	3,224	0.0	0.0	$384.61	$460.00	$0.00	$460.00	1.2	3,246
TOTALS FOR HIGH PRIORITY MEASURES			**1,531,554**	**273.2**	**0.0**	**$182,725.17**	**$700,893.09**	**$92,238.80**	**$608,654.29**	**3.3**	**1,542,263**
TOTALS FOR ALL EVALUATED MEASURES			**1,531,661**	**273.2**	**84.2**	**$183,438.75**	**$751,358.12**	**$94,491.80**	**$656,866.32**	**3.6**	**1,552,227**

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

Lighting Upgrades generally involve the replacement of existing lighting components such as lamps and ballasts (or the entire fixture) with higher efficiency lighting components. These measures save energy by reducing the power used by the lighting components due to improved electrical efficiency.

Lighting Controls measures generally involve the installation of automated controls to turn off lights or reduce light output when not needed. Automated control reduces reliance on occupant behavior for adjusting lights. These measures save energy by reducing the amount of time lights are on.

Motor Upgrades generally involve replacing older standard efficiency motors with high efficiency standard (NEMA Premium®). Motors replacements generally assume the same size motors, just higher efficiency. Although occasionally additional savings can be achieved by downsizing motors to better meet current load requirements. This measure saves energy by reducing the power used by the motors, due to improved electrical efficiency.

Variable Frequency Drives (VFDs) are motor control devices. These measures control the speed of a motor so that the motor spins at peak efficiency during partial load conditions. Sensors adapt the speed to flow, temperature, or pressure settings which is much more efficient that usage a valve or damper to control flow rates, or running the motor at full speed when only partial power is needed. These measures save energy by controlling motor usage more efficiently.

Electric Chiller measures generally involve replacing older inefficient hydronic chillers with modern energy efficient systems. New chillers can provide equivalent cooling compared to older chillers at a reduced energy cost. These measures save energy by reducing chiller energy usage, due to improved electrical and heat transfer efficiency.

Gas Heating (HVAC/Process) measures generally involve replacing older inefficient hydronic heating systems with modern energy efficient systems. Gas heating systems can provide equivalent heating compared to older systems at a reduced energy cost. These measures save energy by reducing the fuel demands for heating, due to improved combustion and heat transfer efficiency.

Food Service Equipment & Refrigeration measures generally involve improvements in the efficiency of cooking, food service, dishwashing, and food storage equipment. These measures may include more efficient convection ovens, steamers, ice machines, or refrigeration. These measures save energy by reducing the energy usage with more energy efficient equipment.

Plug Load Equipment control measures generally involve installing automated devices that limit the power usage or operation of equipment that is plugged into an electric outlet when not in use.

Energy Efficient Practices

TRC also identified 16 low cost (or no cost) energy efficient practices. A facility's energy performance can be significantly improved by employing certain behavioral or operational adjustments and by performing better routine maintenance on building systems. These practices can extend equipment lifetime, improve occupant comfort, provide better health and safety, as well as reduce annual energy and O&M costs. Potential opportunities identified at High School South include:

- Reduce Air Leakage
- Close Doors and Windows
- Use Window Treatments/Coverings
- Perform Regular Lighting Maintenance
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Perform Routine Motor Maintenance
- Use Fans to Reduce Cooling Load
- Practice Use of Thermostat Schedules and Temperature Resets
- Ensure Economizers are Functioning Properly
- Clean Evaporator/Condenser Coils on AC Systems
- Clean and/or Replace HVAC Filters
- Perform Regular Boiler Maintenance
- Perform Regular Water Heater Maintenance
- Install Plug Load Controls
- Water Conservation

For details on these Energy Efficient Practices, please refer to Section 5.

On-Site Generation Measures

TRC evaluated the potential for installing on-site generation for High School South. Based on the configuration of the site and its loads there is a moderate potential for installing a photovoltaic (PV) array.

Figure 4 – Photovoltaic Potential

Potential	Medium	
System Potential	788	kW DC STC
Electric Generation	592,926	kWh/yr
Displaced Cost	$51,580	/yr
Installed Cost	$3,278,100	

For details on our evaluation and on-site generation potential, please refer to Section 6.

1.3 Implementation Planning

To realize the energy savings from the ECMs listed in this report, a project implementation plan must be developed. Available capital must be considered and decisions need to be made whether it is best to pursue individual ECMs separately, groups of ECMs, or a comprehensive approach where all ECMs are implemented together, possibly in conjunction with other facility upgrades or improvements.

Rebates, incentives, and financing are available from NJCEP, as well as other sources, to help reduce the costs associated with the implementation of energy efficiency projects. Prior to implementing any measure, please review the relevant incentive program guidelines before proceeding. This is important because in most cases you will need to submit applications for the incentives prior to purchasing materials or commencing with installation.

The ECMs outlined in this report may qualify under the following program(s):

- SmartStart
- Pay for Performance - Existing Building (P4P EB)
- SREC (Solar Renewable Energy Certificate) Registration Program (SRP)
- Energy Savings Improvement Program (ESIP)

For facilities wanting to pursue only selected individual measures (or planning to phase implementation of selected measures over multiple years), incentives are available through the SmartStart program. To participate in this program you may utilize internal resources, or an outside firm or contractor, to do the final design of the ECM(s) and do the installation. Program pre-approval is required for some SmartStart incentives, so only after receiving pre-approval should you proceed with ECM installation. The incentive estimates listed above in Figure 3 are based on the SmartStart program. More details on this program and others are available in Section 8.

Larger facilities with an interest in a more comprehensive whole building approach to energy conservation should consider participating in the Pay for Performance (P4P) program. Projects eligible for this project program must meet minimum savings requirements. Final incentives are calculated based on actual measured performance achieved at the end of the project. The application process is more involved, and it requires working with a qualified P4P contractor, but the process may result in greater energy savings overall and more lucrative incentives, up to 50% of project's total cost.

For larger facilities with limited capital availability to implement ECMs, project financing may be available through the Energy Savings Improvement Program (ESIP). Supported directly by the NJBPU, ESIP provides government agencies with project development, design, and implementation support services as well as attractive financing for implementing ECMs. An LGEA report (or other approved energy audit) is required for participation in ESIP. Please refer to Section 8.4 for additional information on the ESIP.

The Demand Response Energy Aggregator is a (non-NJCEP) program designed to reduce electric loads at commercial facilities, when wholesale electricity prices are high or when the reliability of the electric grid is threatened due to peak power demand. Demand Response (DR) service providers (a.k.a. Curtailment Service Providers) are registered with PJM, the independent system operator (ISO) for mid-Atlantic state region that is charged with maintaining electric grid reliability. By enabling grid operators to call upon commercial facilities to reduce their electric usage during times of peak demand, the grid is made more reliable and overall transmission costs are reduced for all ratepayers. Curtailment Service Providers provide regular payments to medium and large consumers of electric power for their participation in DR programs. Program participation is voluntary and facilities receive payments whether or not they are called upon to curtail their load during times of peak demand. Refer to Section 7 for additional information on this program.

Additional information on relevant incentive programs is located in Section 8 or: www.njcleanenergy.com/ci.

2 FACILITY INFORMATION AND EXISTING CONDITIONS

2.1 Project Contacts

Figure 5 – Project Contacts

Name	Role	E-Mail	Phone #
Customer			
Thomas Daly	Director of Buildings and Grounds	Thomas.Daly@ww-p.org	609-455-4179
Designated Representative			
Anthony	Head Electrician	N/A	908-770-7105
TRC Energy Services			
Alexander Klieverik	Auditor	aklieverik@trcsolutions.com	(732) 855-0033

2.2 General Site Information

On July 24, 2018 and July 25, 2018, TRC performed an energy audit at High School South located in West Windsor Township, New Jersey. TRC's team met with Douglas McGarry, Ed McLaughlin and Jason Harris to review the facility operations and help focus our investigation on specific energy-using systems.

High School South is a 270,372 square foot facility comprised of various space types including classrooms, offices, dining rooms, two gymnasiums, locker rooms, a commercial kitchen, a theatre, a pool, a media center, a playhouse, and various storage and mechanical spaces.

The building was constructed in 1982. Over the last five years the facility has replaced all of its existing T12 fluorescent fixtures with T8 fluorescent fixtures.

2.3 Building Occupancy

The building is open Monday through Friday as well as weekends throughout the year. The typical schedule is presented in the table below. During a typical day, the facility is occupied by approximately 269 staff and 1585 students.

Figure 6 - Building Schedule

Building Name	Weekday/Weekend	Operating Schedule
West Windsor-Plainsboro High School South	Weekday	6:00 AM to 10:00 PM
West Windsor-Plainsboro High School South	Weekend	9:00 AM to 6:00 PM

2.4 Building Envelope

The building is constructed of concrete block, and structural steel with a brick facade. The building has flat roof sections covered with gravel that is in fair condition. The buildings have double pane windows throughout most of the building which are in good condition and show little sign of excessive infiltration. The exterior doors are constructed of aluminum and in good condition except that some of the door seals have worn out which increases the level of outside air infiltration.

The pool area located on the south side of the building is covered by a large canvas bubble. The area is pressurized by a 5 hp fan running 24 hours a day, seven days a week while the pool area is open in the summer.



2.5 On-Site Generation

High School South installed a 135-kW solar energy project in 2010. The project included photovoltaic (PV) arrays on both buildings. There are approximately 720 PV panels in total. The systems provide approximately 10% of the electricity required by the facility.

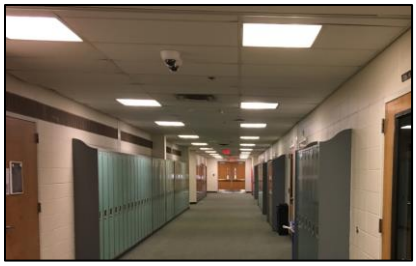
2.6 Energy-Using Systems

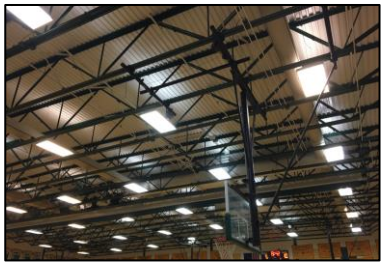
Please see Appendix A: Equipment Inventory & Recommendations for an inventory of the facility's equipment.

Lighting System

Lighting is provided mostly by linear fluorescent T8 lamps with electronic ballasts as well as some compact fluorescent lamps (CFL) and incandescent lamps. Most of the fixtures are 2-lamp or 4-lamp, 4-foot long troffers with diffusers. The common areas with high ceilings which includes the dining areas (commons 1, 2, & 3) and classrooms around the 600, 700, 800, 900, 1000, and mezzanine section are served by 4-foot T5 fluorescent fixtures with 4 lamps. For the T5 fixtures, there is an automated system of controls designed to use only 2 lamps at a time, and alternate daily.

Some interior areas of the building have HID fixtures with metal halide or mercury vapor lamps. Section 600, 700, 800, and classroom 901 have indirect HID fixtures. The pool bubble, media center, theater stage area, and teacher's prep area have direct fixtures with HID lamps that are either hanging or recessed troffers with diffusers.



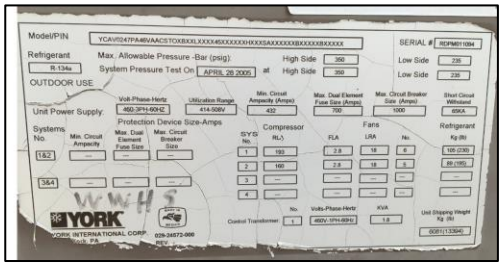


Lighting control in most spaces is provided by wall switches. There are some ceiling-mounted and wall-mounted occupancy sensors located in classrooms 250A through 250D, the training room and office, a couple of renovated restrooms, a few classroom offices, a few music rooms, the theater corridor and back entrance corridor as well as the dressing rooms. Stairwells, elevator lobbies and main lobby areas do not contain any occupancy sensors and are on when the building is open.

The building's exterior lighting consists primarily of high-pressure sodium (HPS) fixtures that are controlled by a time-clock or photocells.

Chilled Water System

The facility is served by a single chilled water plant. The chiller plant consists of a one 236 ton, York, R-134a, air-cooled screw chiller. The chiller is located on the south side of the building between the loading dock and pool bubble. The chiller operates on a primary distribution loop with three constant flow 15 hp pumps. Chilled water is distributed to the facility based on a reset schedule. Chilled water is distributed at 42°F when the outside air temperature is above 64°F and the setpoint is reset to 50°F when the outside air is below 55°F. The chiller plant is locked out when the outside air temperature is below 45°F and turned off from mid-December through February.

The chiller plant supplies chilled water to air handlers and unit ventilators throughout the building.

Hot Water Heating System.

The hot water system consists of eight AERCO Benchmark 2.0, 1,880 kBtu/hr. output, condensing boilers. The boilers have a nominal combustion efficiency of 94%. The boilers are configured in a primary-secondary distribution loop with two constant flow 10 hp hot water pumps serving the primary loop. The secondary loop is divided into three zones, each served by variable flow pumps. Zone 1 is served by a 50 hp pump and consists of most of the building, including the classrooms, offices and hallways from sections 90, 400, 500, 600, 700, 800, 900, 1000, and media center. Zone 2 is served by a 30 hp pump and consists of the playhouse at the center of the building, the art wing, commons 1, 2, & 3, the theatre and the center hallway that goes from classroom 90 to the theatre. Zone 3 is served by a 15 hp pump, and consists of the gym and locker rooms, the pool area, and the 100 and 200 sections. Hot water is supplied at 180°F when the outside air temperature is below 50°F and the setpoint is reset to 155°F when the outside air is above 65°F. The boilers provide hot water to interior and rooftop air handlers, as well as perimeter unit ventilators.



The boilers operate in a lead/lag configuration. According to on-site staff, five of the eight boilers may be required during cold weather. The lead boiler is rotated weekly.

The boilers are in good condition and well maintained.

The boilers at the building are controlled with an AERCO Boiler Management System (BMS). The BMS uses outdoor air temperature to determine boiler operation. The majority of the building still uses pneumatic controls which are not tied into the BMS.

The only area of the building not served by the boilers is the new gym also known as the auxiliary gym. There are two packaged units with direct expansion cooling and furnace components located on the roof of the new gym. The heating output capacity is 765 kBtu/hr., and a cooling capacity of 40-tons.

Chilled and Hot Water Air Conditioning System

There are twelve air handling units (AHU2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, & 19) located in mechanical rooms that serve the entire school. Each AHU is a constant volume (CAV) unit with hot water and chilled water coils which draws air from its own return air shaft and supplies air to its own air shaft.

AHU2, 3, and 4 are located in a mechanical room of the mezzanine and serves the mezzanine and main office area. The AHUs are a constant volume (CAV) with 2 hp and 1.5 hp supply fans. Supply air temperature is reset based on return air (average zone air) temperature. AHU 5 & 6 are located in the mechanical room above the auditorium. Each unit has a 2 hp supply fan.

Air is supplied at 75°F when the return air temperature is below 70°F and the supply air setpoint is reset to 55°F when the return air temperature is above 72°F.

AHU7, 8, 9, 10, 11, and 12 are located in a mechanical room in the mezzanine area of the building and serves the entire second floor of the building. AHU7, 8, 9, and 12 have a single 3 hp constant volume supply fan, while AHU11 has a 1.5 hp supply fan. AHU10 has a larger 15 hp supply fan and it serves the open area of the classrooms and mezzanine on the west side of the building. AHU19 is located in the space above the old gymnasium and has a 3 hp supply fan suppling conditioned air to classrooms 250A-D and the associated corridor. All of the fans have inlet vanes and the system flow is controlled by varying the pitch of the vanes.

This units, belts, and associated components are in relatively good condition. Motors and duct work are well maintained.



Direct Expansion Air Conditioning System (DX)

There are various areas throughout the building which are not served by the chilled water system; but are served by either packaged air conditioning (AC) rooftop units with direct expansion components or split-system and mini-split-system air conditioners. There are packaged AC rooftop units serving the auditorium, stage area, music room, music office, vocal music room, band room, the art rooms, photo room, weight room, gym corridors, new gym and auxiliary gym. The auditorium is served by a 75-ton unit, and the stage area is served by a 25-ton packaged unit. The music room is served by an 18-ton unit, the music office is served by a 5-ton packaged unit, and the vocal music room is served by a 10-ton unit. The band room is served by a 13-ton packaged unit, and the art rooms are served by a 10-ton unit and a 7-ton unit. The photo room is served by a 3-ton unit. The weight room and gym corridors are served by two 15-ton packaged units, and the new gym is served by two 40-ton units. The auxiliary gym is served by two 15-ton packaged units. The units are constant air volume and utilize a scroll compressor and a direct-expansion (DX) coil. The units have outside air economizers to utilize free cooling when the outside air temperature is lower than the return air temperature.

The units are controlled by individual thermostats located in the individual space. Setpoints range from 72°F to 74°F.

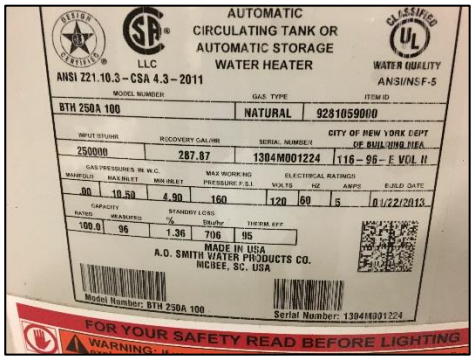
There are ten mini-split ductless heat pump units supplying heating and/or cooling to various spaces within the building. There are two IDF (Intermediate Distribution Frame) rooms with cooling-only ductless mini-split units with a capacity of 2-tons and 2.8-ton and a rated efficiency of 13 SEER. There are also five additional IDF rooms with cooling-only mini-split units with a capacity of 0.75-tons and a rated efficiency of 13 SEER. There are three offices served by mini-split heat pumps with a cooling capacity of 1.5-tons and 0.75-tons. They have a heating capacity of 16 kBtu/hr. and 8 kBtu/hr. The units are controlled by thermostats and controls built into the interior components located in zones.

There are ten split-system air conditioners located on the roof of the building serving five offices, the science wing, two server rooms, and the media center. There are five offices served by four 1.5-ton units, and one 2.5-ton unit. The two server rooms are each served by a 9,000 Btu unit. The science wing is served by two 15-ton units. The media center is served by a 20-ton and 15-ton packaged unit. Each space has the condenser unit located on the roof, and the evaporator fan in the recessed ceiling. The units are manually controlled by a thermostat located in each zone.



Domestic Hot Water Heating System

The domestic hot water heating system for the facility consists of three A.O. Smith gas-fired condensing water heaters, and two small Rheem electric water heaters. There are two A.O. Smith condensing water heaters with an input rating of 250 kBtu/hr located in the boiler room serving majority of the building. The gym area including the locker rooms and offices are served by an A.O. Smith condensing water heater with an input rating of 150 kBtu/hr located in the water heater room. Each A.O. Smith water heater has a 100-gallon storage tank. Two ¼ recirculation pumps distribute 120°F water to the entire site except the kitchen. The recirculation pumps operate continuously. The Rheem electric water heaters are located in the ticket and concession booth, and a custodial closet. The ticket booth water heater has a capacity of 40 gallons, and an input rating of 4.5 kW. The water heater is in the custodial closet in the 500 section and has a capacity of 10 gallons and an input rating of 2 kW.

Food Service Equipment

The facility has a commercial kitchen that is used to prepare breakfast and lunch for the students. The ovens, range tops and griddle are all gas fired. The ovens and griddle are turned on around 6:00 AM when the kitchen staff arrive and turned off at 2:00 PM when lunch service stops. There is a dishwasher with an electric booster heater that provides 145°F rinse water. The dishwasher operates from 7:00 AM to 10:00 AM and again from noon to 3:00 PM.

Refrigeration

The facility has two different storage cold storage areas: a walk-in cooler area and a walk-in freezer area. The cooler area is maintained at a constant temperature of 34°F and freezer area is maintained at a constant -1°F. Cooler area is served by three evaporators and freezer area is served by four evaporators each having a single 1/2 hp fan. There is a 1-ton condensing unit with reciprocating compressors connected to evaporators serving the cooler section and there is a single 1.25-ton condensing unit connected to evaporators serving the freezer area.

Building Plug Load

There are roughly 332 computer work stations, 66 projectors, 45 desk printers, 20 LED TVs, and nine photocopiers throughout the facility. There is no centralized PC power management software installed.

There are roughly four server closets scattered throughout the facility. Half of them have cooling provided by dedicated split systems. The remaining use air provided by the main AHUs.

The facility has two refrigerated beverage vending machines, eight top freezer refrigerators, eight water coolers, eight compact refrigerators, 11 coffee makers, and 17 microwave ovens.

2.7 Water-Using Systems

There are 30 restrooms at this facility. A sampling of restrooms found that the faucets are rated for 2.0 gallons per minute (gpm) or lower, the toilets are rated at 2.5 gallons per flush (gpf) and the urinals are rated at 1.6 gpf.

The school has a girl's and boy's locker room for the gymnasium and the pool. The girl's locker room in the gym has eight showerheads and the boy's locker room has 12 showerheads. The girl's and boy's locker rooms in the pool area each have six showerheads each. All of the showerheads are rated at 2.5 gpm.

3 SITE ENERGY USE AND COSTS

Utility data for electricity and natural gas was analyzed to identify opportunities for savings. In addition, data for electricity and natural gas was evaluated to determine the annual energy performance metrics for the building in energy cost per square foot and energy usage per square foot. These metrics are an estimate of the relative energy efficiency of this building. There are a number of factors that could cause the energy use of this building to vary from the "typical" energy usage profile for facilities with similar characteristics. Local weather conditions, building age and insulation levels, equipment efficiency, daily occupancy hours, changes in occupancy throughout the year, equipment operating hours, and energy efficient behavior of occupants all contribute to benchmarking scores. Please refer to the Benchmarking section within Section 3.4 for additional information.

3.1 Total Cost of Energy

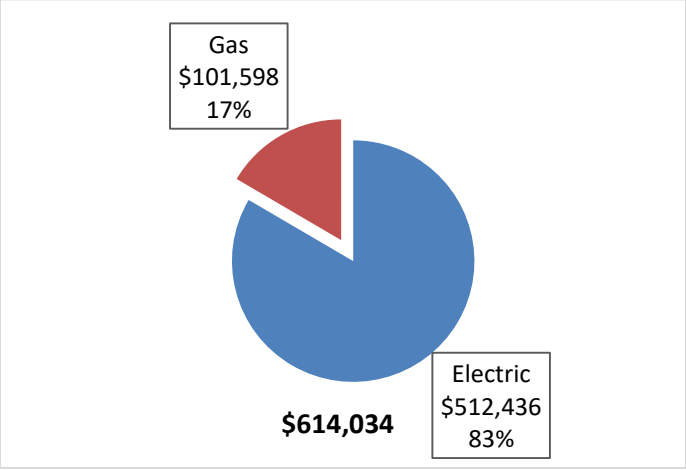
The following energy consumption and cost data is based on the last 12-month period of utility billing data that was provided for each utility. A profile of the annual energy consumption and energy cost of the facility was developed from this information.

Figure 7 - Utility Summary

Utility Summary for High School South		
Fuel	**Usage**	**Cost**
Electricity	4,295,104 kWh	$512,436
Natural Gas	122,031 Therms	$101,598
Total		**$614,034**

The current annual energy cost for this facility is $614,034 as shown in the chart below.

Figure 8 - Energy Cost Breakdown



3.2 Electricity Usage

Electricity is provided by PSE&G. The average electric cost over the past 12 months was $0.119/kWh, which is the blended rate that includes energy supply, distribution, and other charges. This rate is used throughout the analyses in this report to assess energy costs and savings. The monthly electricity consumption and peak demand are shown in the chart below.

Figure 9 - Electric Usage & Demand

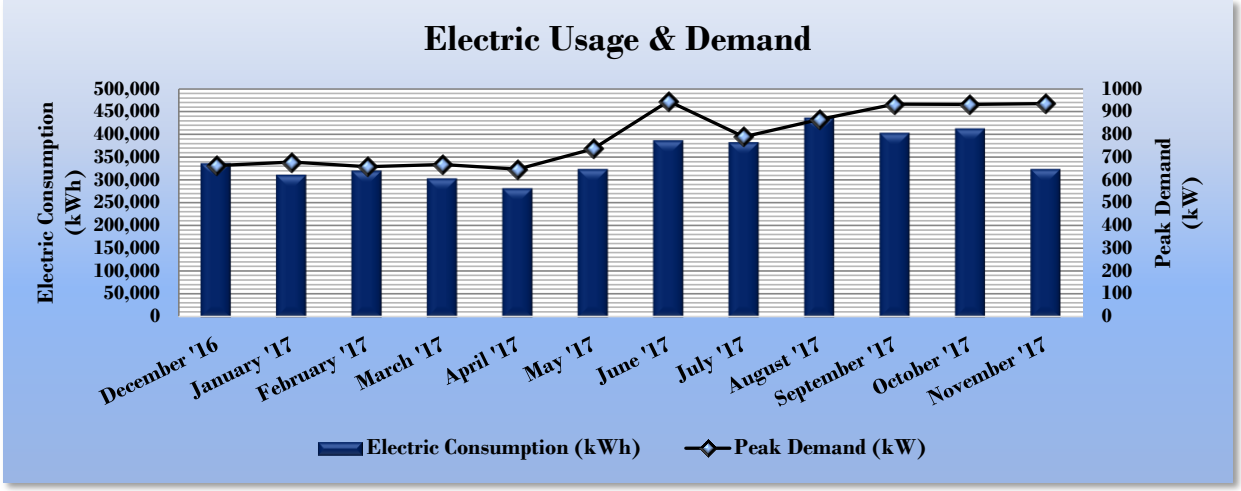


Figure 10 - Electric Usage & Demand

Electric Billing Data for High School South					
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Demand Cost	Total Electric Cost
12/13/16	33	336,936	663	$0	$37,108
1/18/17	35	311,331	678	$0	$35,105
2/16/17	28	320,518	658	$0	$36,190
3/20/17	31	303,476	668	$0	$33,766
4/27/17	37	281,987	648	$0	$31,243
5/18/17	20	324,024	737	$0	$36,073
6/19/17	31	387,093	946	$0	$52,021
7/19/17	29	382,490	790	$0	$49,132
8/17/17	28	436,245	865	$0	$56,019
9/17/17	30	403,419	934	$0	$53,558
10/17/17	29	412,765	932	$0	$46,481
11/15/17	28	324,215	935	$0	$37,315
Totals	**359**	**4,224,499**	**945.8**	**$0**	**$504,012**
Annual	**365**	**4,295,104**	**945.8**	**$0**	**$512,436**

3.3 Natural Gas Usage

Natural gas is provided by PSE&G. The average gas cost for the past 12 months is $0.833/therm, which is the blended rate used throughout the analyses in this report. The monthly gas consumption is shown in the chart below. Note the dip in usage in February. This may have been reduced due to a warm spell and the shorter billing period.

Figure 11 - Natural Gas Usage

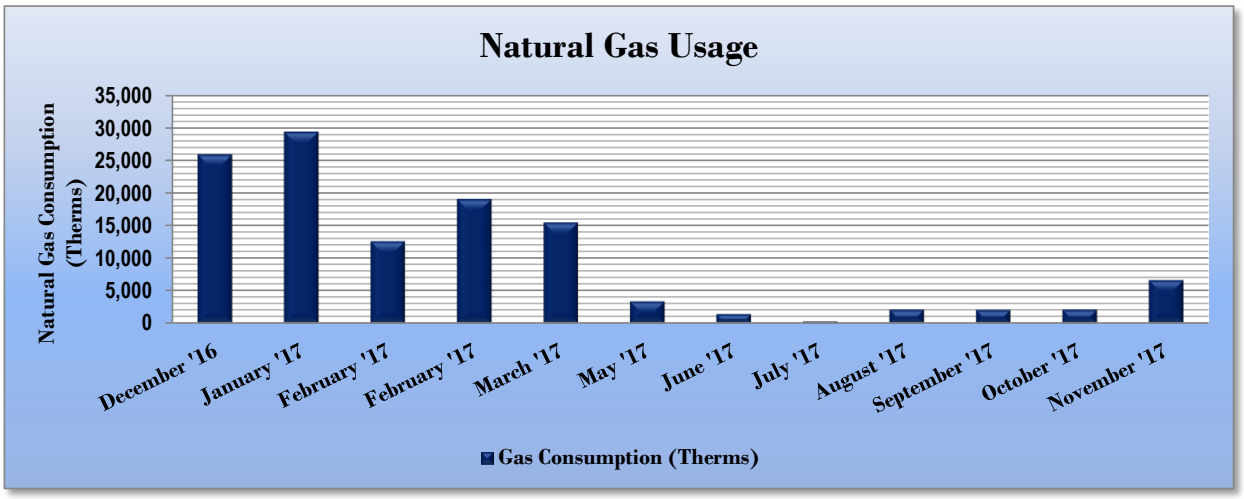


Figure 12 - Natural Gas Usage

Gas Billing Data for High School South			
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost
12/13/16	33	25,849	$21,498
1/18/17	35	29,320	$24,084
2/16/17	28	12,578	$12,190
3/14/17	31	19,001	$16,944
4/15/17	37	15,439	$9,756
5/18/17	20	3,362	$2,212
6/19/17	31	1,412	$999
7/19/17	29	270	$280
8/17/17	28	2,078	$1,431
9/17/17	30	2,043	$1,409
10/17/17	29	2,073	$1,426
11/15/17	28	6,599	$7,700
Totals	**359**	**120,025**	**$99,928**
Annual	**365**	**122,031**	**$101,598**

3.4 Benchmarking

This facility was benchmarked using Portfolio Manager®, an online tool created and managed by the United States Environmental Protection Agency (EPA) through the ENERGY STAR® program. Portfolio Manager® analyzes your building's consumption data, cost information, and operational use details and then compares its performance against a national median for similar buildings of its type. Metrics provided by this analysis are Energy Use Intensity (EUI) and an ENERGY STAR® score for select building types.

The EUI is a measure of a facility's energy consumption per square foot, and it is the standard metric for comparing buildings' energy performance. Comparing the EUI of a building with the national median EUI for that building type illustrates whether that building uses more or less energy than similar buildings of its type on a square foot basis. EUI is presented in terms of "site energy" and "source energy." Site energy is the amount of fuel and electricity consumed by a building as reflected in utility bills. Source energy includes fuel consumed to generate electricity consumed at the site, factoring in electric production and distribution losses for the region.

Figure 13 - Energy Use Intensity Comparison – Existing Conditions

Energy Use Intensity Comparison - Existing Conditions		
	High School South	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft^2)	217.6	141.4
Site Energy Use Intensity (kBtu/ft^2)	99.3	58.2

Implementation of all recommended measures in this report would improve the building's estimated EUI significantly as shown in the table below:

Figure 14 - Energy Use Intensity Comparison – Following Installation of Recommended Measures

Energy Use Intensity Comparison - Following Installation of Recommended Measures		
	High School South	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft^2)	156.9	141.4
Site Energy Use Intensity (kBtu/ft^2)	80.0	58.2

Many types of commercial buildings are also eligible to receive an ENERGY STAR® score. This score is a percentile ranking from 1 to 100. It compares your building's energy performance to similar buildings nationwide. A score of 50 represents median energy performance, while a score of 75 means your building performs better than 75 percent of all similar buildings nationwide and may be eligible for ENERGY STAR® certification. Your building is not is one of the building categories that are eligible to receive a score. This facility has a current score of 21.

A Portfolio Manager® Statement of Energy Performance (SEP) was generated for this facility, see Appendix B: ENERGY STAR® Statement of Energy Performance.

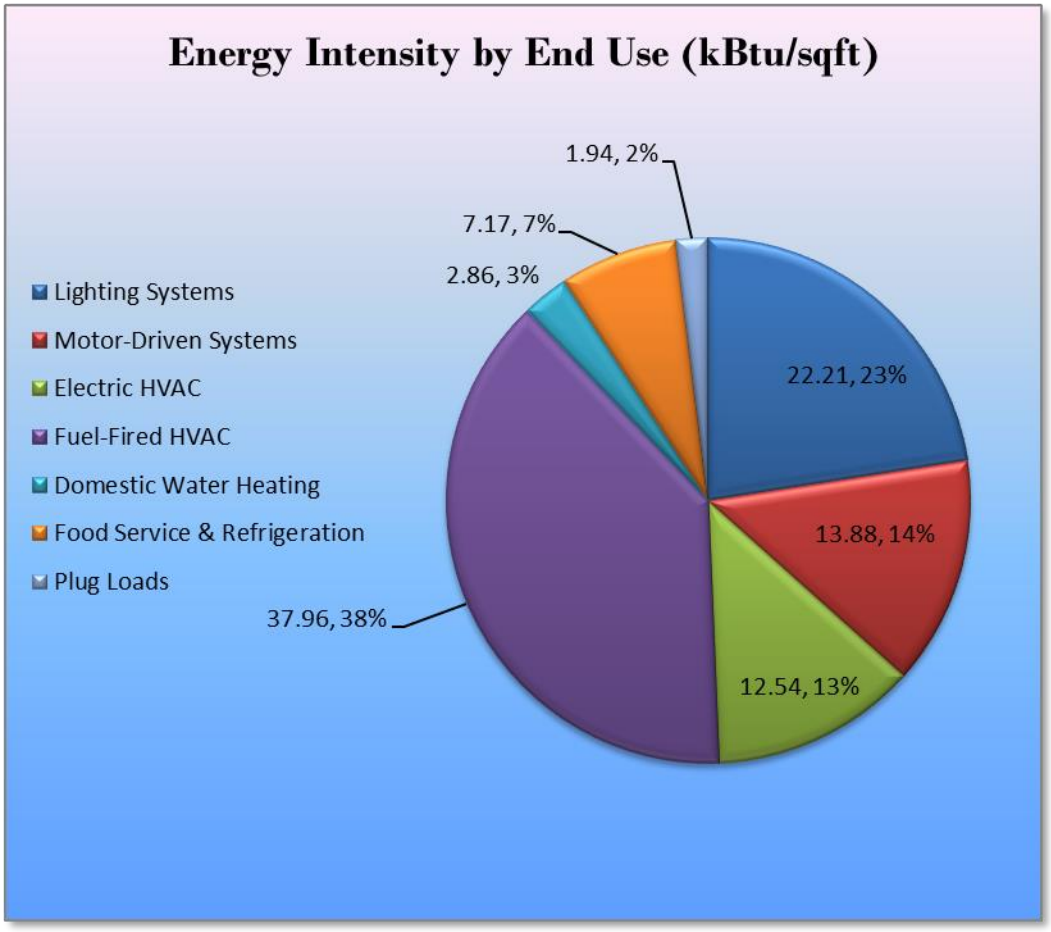
For more information on ENERGY STAR® certification go to: https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1.

A Portfolio Manager® account has been created online for your facility and you will be provided with the login information for the account. We encourage you to update your utility information in Portfolio Manager® regularly, so that you can keep track of your building's performance. Free online training is available to help you use ENERGY STAR® Portfolio Manager® to track your building's performance at: https://www.energystar.gov/buildings/training.

3.5 Energy End-Use Breakdown

In order to provide a complete overview of energy consumption across building systems, an energy balance was performed at this facility. An energy balance utilizes standard practice engineering methods to evaluate all components of the various electric and fuel-fired systems found in a building to determine their proportional contribution to overall building energy usage. This chart of energy end uses highlights the relative contribution of each equipment category to total energy usage. This can help determine where the greatest benefits might be found from energy efficiency measures.

Figure 15 - Energy Balance (% and kBtu/SF)



4 ENERGY CONSERVATION MEASURES

The goal of this audit report is to identify potential energy efficiency opportunities, help prioritize specific measures for implementation, and provide information to High School South regarding financial incentives for which they may qualify to implement the recommended measures. For this audit report, most measures have received only a preliminary analysis of feasibility which identifies expected ranges of savings and costs. This level of analysis is usually considered sufficient to demonstrate project cost-effectiveness and help prioritize energy measures. Savings are based on the New Jersey Clean Energy Program Protocols to Measure Resource Savings dated June 29, 2016, approved by the New Jersey Board of Public Utilities. Further analysis or investigation may be required to calculate more precise savings based on specific circumstances. A higher level of investigation may be necessary to support any custom SmartStart or Pay for Performance, or Direct Install incentive applications. Financial incentives for the ECMs identified in this report have been calculated based the NJCEP prescriptive SmartStart program. Some measures and proposed upgrade projects may be eligible for higher incentives than those shown below through other NJCEP programs as described in Section 8.

The following sections describe the evaluated measures.

4.1 Recommended ECMs

The measures below have been evaluated by the auditor and are recommended for implementation at the facility.

Figure 16 – Summary of Recommended ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**1,108,797**	**163.3**	**0.0**	**$132,287.25**	**$359,431.30**	**$54,575.00**	**$304,856.30**	**2.3**	**1,116,550**
ECM 1	Install LED Fixtures	566,544	73.5	0.0	$67,592.66	$202,069.80	$16,290.00	$185,779.80	2.7	570,505
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	129	0.1	0.0	$15.37	$206.32	$30.00	$176.32	11.5	130
ECM 3	Retrofit Fixtures with LED Lamps	542,124	89.7	0.0	$64,679.22	$157,155.18	$38,255.00	$118,900.18	1.8	545,915
Lighting Control Measures		**134,095**	**19.6**	**0.0**	**$15,998.48**	**$79,955.00**	**$15,915.00**	**$64,040.00**	**4.0**	**135,033**
ECM 4	Install Occupancy Sensor Lighting Controls	85,118	13.9	0.0	$10,155.21	$62,155.00	$7,025.00	$55,130.00	5.4	85,713
ECM 5	Install High/Low Lighitng Controls	48,977	5.7	0.0	$5,843.27	$17,800.00	$8,890.00	$8,910.00	1.5	49,319
Motor Upgrades		**915**	**0.2**	**0.0**	**$109.22**	**$8,808.36**	**$0.00**	**$8,808.36**	**80.6**	**922**
ECM 6	Premium Efficiency Motors	915	0.2	0.0	$109.22	$8,808.36	$0.00	$8,808.36	80.6	922
Variable Frequency Drive (VFD) Measures		**77,592**	**7.9**	**0.0**	**$9,257.25**	**$23,199.25**	**$0.00**	**$23,199.25**	**2.5**	**78,134**
ECM 7	Install VFDs on Chilled Water Pumps	53,592	5.5	0.0	$6,393.85	$15,583.35	$0.00	$15,583.35	2.4	53,966
ECM 8	Install VFDs on Hot Water Pumps	24,000	2.5	0.0	$2,863.40	$7,615.90	$0.00	$7,615.90	2.7	24,168
Electric Chiller Replacement		**206,931**	**82.2**	**0.0**	**$24,688.36**	**$229,039.18**	**$21,748.80**	**$207,290.38**	**8.4**	**208,378**
ECM 9	Install High Efficiency Chillers	206,931	82.2	0.0	$24,688.36	$229,039.18	$21,748.80	$207,290.38	8.4	208,378
Plug Load Equipment Control - Vending Machine		**3,224**	**0.0**	**0.0**	**$384.61**	**$460.00**	**$0.00**	**$460.00**	**1.2**	**3,246**
ECM 10	Vending Machine Control	3,224	0.0	0.0	$384.61	$460.00	$0.00	$460.00	1.2	3,246
TOTALS		**1,531,554**	**273.2**	**0.0**	**$182,725.17**	**$700,893.09**	**$92,238.80**	**$608,654.29**	**3.3**	**1,542,263**

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

4.1.1 Lighting Upgrades

Recommended upgrades to existing lighting fixtures are summarized in Figure 17 below.

Figure 17 – Summary of Lighting Upgrade ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**1,108,797**	**163.3**	**0.0**	**$132,287.25**	**$359,431.30**	**$54,575.00**	**$304,856.30**	**2.3**	**1,116,550**
ECM 1	Install LED Fixtures	566,544	73.5	0.0	$67,592.66	$202,069.80	$16,290.00	$185,779.80	2.7	570,505
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	129	0.1	0.0	$15.37	$206.32	$30.00	$176.32	11.5	130
ECM 3	Retrofit Fixtures with LED Lamps	542,124	89.7	0.0	$64,679.22	$157,155.18	$38,255.00	$118,900.18	1.8	545,915

During lighting upgrade planning and design, we recommend a comprehensive approach that considers both the efficiency of the lighting fixtures and how they are controlled.

ECM 1: Install LED Fixtures

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	309,863	43.1	0.0	$36,968.88	$66,666.14	$8,940.00	$57,726.14	1.6	312,030
Exterior	256,680	30.3	0.0	$30,623.78	$135,403.67	$7,350.00	$128,053.67	4.2	258,475

Measure Description

We recommend replacing existing fixtures containing HID lamps with new high-performance LED light fixtures. This measure saves energy by installing LEDs which use less power than other technologies with a comparable light output.

Additional savings from lighting maintenance can be anticipated since LEDs have lifetimes which are more than twice that of HID lamps.

ECM 2: Retrofit Fluorescent Fixtures with LED Lamps and Drivers

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	129	0.1	0.0	$15.37	$206.32	$30.00	$176.32	11.5	130
Exterior	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.0	0

Measure Description

We recommend retrofitting existing fluorescent fixtures by removing fluorescent tubes and ballasts and replacing them with LEDs and LED drivers (if necessary), which are designed to be used retrofitted fluorescent fixtures. The measure uses the existing fixture housing but replaces the rest of the components with more efficient lighting technology. This measure saves energy by installing LEDs which use less power than other lighting technologies yet provide equivalent lighting output for the space.

Additional savings from lighting maintenance can be anticipated since LEDs have lifetimes which are more than twice that of fluorescent tubes and more than 10 times longer than many incandescent lamps.

ECM 3: Retrofit Fixtures with LED Lamps

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	541,664	89.7	0.0	$64,624.35	$156,952.19	$38,240.00	$118,712.19	1.8	545,452
Exterior	460	0.1	0.0	$54.87	$203.00	$15.00	$188.00	3.4	463

Measure Description

We recommend retrofitting existing incandescent, compact fluorescent, and linear fluorescent lighting technologies with LED lamps. Many LED tube lamps are direct replacements for existing fluorescent lamps and can be installed while leaving the fluorescent fixture ballast in place. LED bulbs can be used in existing fixtures as a direct replacement for most other lighting technologies. This measure saves energy by installing LEDs which use less power than other lighting technologies yet provide equivalent lighting output for the space.

Additional savings from lighting maintenance can be anticipated since LEDs have lifetimes which are more than twice that of fluorescent lamps and more than 10 times longer than many incandescent lamps.

4.1.2 Lighting Control Measures

Our recommendations for lighting control measures are summarized in Figure 18 below.

Figure 18 – Summary of Lighting Control ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Lighting Control Measures		**134,095**	**19.6**	**0.0**	**$15,998.48**	**$79,955.00**	**$15,915.00**	**$64,040.00**	**4.0**	**135,033**
ECM 4	Install Occupancy Sensor Lighting Controls	85,118	13.9	0.0	$10,155.21	$62,155.00	$7,025.00	$55,130.00	5.4	85,713
ECM 5	Install High/Low Lighitng Controls	48,977	5.7	0.0	$5,843.27	$17,800.00	$8,890.00	$8,910.00	1.5	49,319

During lighting upgrade planning and design, we recommend a comprehensive approach that considers both the efficiency of the lighting fixtures and how they are controlled.

ECM 4: Install Occupancy Sensor Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
85,118	13.9	0.0	$10,155.21	$62,155.00	$7,025.00	$55,130.00	5.4	85,713

Measure Description

We recommend installing occupancy sensors to control lighting fixtures that are currently controlled by manual switches in restrooms, storage rooms, classrooms, and offices areas. Lighting sensors detect occupancy using ultrasonic and/or infrared sensors. For most spaces, we recommend lighting controls use dual technology sensors, which can eliminate the possibility of any lights turning off unexpectedly. Lighting systems are enabled when an occupant is detected. Fixtures are automatically turned off after an area has been vacant for a preset period. Some controls also provide dimming options and all modern occupancy controls can be easily over-ridden by room occupants to allow them to manually turn fixtures on or off, as desired. Energy savings results from only operating lighting systems when they are required.

Occupancy sensors may be mounted on the wall at existing switch locations, mounted on the ceiling, or in remote locations. In general, wall switch replacement sensors are recommended for single occupant offices and other small rooms. Ceiling-mounted or remote mounted sensors are used in locations without local switching or where wall switches are not in the line-of-sight of the main work area and in large spaces. We recommend a comprehensive approach to lighting design that upgrades both the lighting fixtures and the controls together for maximum energy savings and improved lighting for occupants.

ECM 5: Install High/Low Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
48,977	5.7	0.0	$5,843.27	$17,800.00	$8,890.00	$8,910.00	1.5	49,319

Measure Description

We recommend installing occupancy sensors to provide dual level lighting control for lighting fixtures in spaces that are infrequently occupied but may require some level of continuous lighting for safety or security reasons. Typical areas for such lighting control are stairwells, interior corridors, parking lots, and parking garages.

Lighting fixtures with these controls operate at default low levels when the area is not occupied to provide minimal lighting to meet security or safety requirements. Sensors detect occupancy using ultrasonic and/or infrared sensors. The lighting systems are switched to full lighting levels whenever an occupant is detected. Fixtures are automatically switched back to low level after an area has been vacant for a preset period of time. Energy savings results from only providing full lighting levels when it is required.

For this type of measure the occupancy sensors will generally be ceiling or fixture mounted. Sufficient sensor coverage needs to be provided to ensure that lights turn on in each area as an occupant approaches.

Additional savings from reduced lighting maintenance may also result from this measure, due to reduced lamp operation.

4.1.3 Motor Upgrades

Our recommendations for motor upgrade measures are summarized in Figure 19 below.

Figure 19 - Summary of Motor Upgrade ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Motor Upgrades		**915**	**0.2**	**0.0**	**$109.22**	**$8,808.36**	**$0.00**	**$8,808.36**	**80.6**	**922**
ECM 6	Premium Efficiency Motors	915	0.2	0.0	$109.22	$8,808.36	$0.00	$8,808.36	80.6	922

ECM 6: Premium Efficiency Motors

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
915	0.2	0.0	$109.22	$8,808.36	$0.00	$8,808.36	80.6	922

Measure Description

We recommend replacing standard efficiency motors with NEMA Premium® efficiency motors. There are two 10 hp heating hot water pump motors, and three 15 hp chilled water pump motors in need of replacement. Our evaluation assumes that existing motors will be replaced with motors of equivalent size and type. Although occasionally additional savings can be achieved by downsizing motors to better meet the motor's current load requirements. The base case motor efficiencies are estimated from nameplate information and our best estimates of motor run hours. Efficiencies of proposed motor upgrades are obtained from the *New Jersey's Clean Energy Program Protocols to Measure Resource Savings (2016)*. Savings are based on the difference between baseline and proposed efficiencies and the assumed annual operating hours.

4.1.4 Variable Frequency Drive Measures

Our recommendations for variable frequency drive (VFD) measures are summarized in Figure 20 below.

Figure 20 – Summary of Variable Frequency Drive ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Variable Frequency Drive (VFD) Measures		**77,592**	**7.9**	**0.0**	**$9,257.25**	**$23,199.25**	**$0.00**	**$23,199.25**	**2.5**	**78,134**
ECM 7	Install VFDs on Chilled Water Pumps	53,592	5.5	0.0	$6,393.85	$15,583.35	$0.00	$15,583.35	2.4	53,966
ECM 8	Install VFDs on Hot Water Pumps	24,000	2.5	0.0	$2,863.40	$7,615.90	$0.00	$7,615.90	2.7	24,168

ECM 7: Install VFDs on Chilled Water Pumps

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
53,592	5.5	0.0	$6,393.85	$15,583.35	$0.00	$15,583.35	2.4	53,966

Measure Description

We recommend installing a variable frequency drives (VFD) to control chilled water circulation pumps. This measure requires that chilled water coils be served by 2-way valves and that a differential pressure sensor be installed in the chilled water loop. As the chilled water valves close, the differential pressure increases. The VFD modulates pump speed to maintain a differential pressure setpoint. Energy savings results from reducing pump motor speed (and power) as chilled water valves close. The magnitude of energy savings is based on the estimated amount of time that the system operates at reduced loads.

For systems with variable chilled water flow through the chiller, the minimum flow to prevent the chiller from tripping off will have to be determined during the final project design. The control system should be programmed to maintain the minimum flow through the chiller and to prevent pump cavitation.

ECM 8: Install VFDs on Hot Water Pumps

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
24,000	2.5	0.0	$2,863.40	$7,615.90	$0.00	$7,615.90	2.7	24,168

Measure Description

We recommend installing a variable frequency drives (VFD) to control the heating hot water circulating pumps. This measure requires that a majority of the hot water coils be served by 2-way valves and that a differential pressure sensor is installed in the hot water loop. As the hot water valves close, the differential pressure increases. The VFD modulates pump speed to maintain a differential pressure setpoint. Energy savings results from reducing pump motor speed (and power) as hot water valves close. The magnitude of energy savings is based on the estimated amount of time that the system will operate at reduced load.

4.1.5 Electric Chiller Replacement

Our recommendations for electric chiller replacement measures are summarized in Figure 21 below.

Figure 21 - Summary of Electric Chiller Replacement ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Electric Chiller Replacement		**206,931**	**82.2**	**0.0**	**$24,688.36**	**$229,039.18**	**$21,748.80**	**$207,290.38**	**8.4**	**208,378**
ECM 9	Install High Efficiency Chillers	206,931	82.2	0.0	$24,688.36	$229,039.18	$21,748.80	$207,290.38	8.4	208,378

ECM 9: Install High Efficiency Chillers

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
206,931	82.2	0.0	$24,688.36	$229,039.18	$21,748.80	$207,290.38	8.4	208,378

Measure Description

We recommend replacing older inefficient electric chillers with new high efficiency chillers. The type of chiller to be installed depends on the magnitude of the cooling load and variability of the cooling load profile. Positive displacement chillers are usually under 600 tons of cooling capacity and centrifugal chillers generally start at 150 tons of cooling capacity. Constant speed chillers should be used to meet cooling loads with little or no variation while variable speed chillers are more efficient for variable cooling load profiles. Water cooled chillers are more efficient than air cooled chillers but require cooling towers and additional pumps to circulate the cooling water. In any given size range variable speed chillers tend to have better partial load efficiency, but worse full load efficiency, than constant speed chillers.

The savings result from the improvement in chiller efficiency and matching the right type of chiller to the cooling load. The energy savings associated with this measure is based on the cooling capacity of the new chiller, the improvement in efficiency compared with the base case equipment, the cooling load profile, and the estimated annual operating hours of the chiller before and after the upgrade. Energy savings are maximized by proper selection of new equipment based on the cooling load profile.

4.1.6 Plug Load Equipment Control - Vending Machines

Our recommendations for plug load equipment control measures are summarized in Figure 22 below.

Figure 22 - Summary of Plug Load Equipment ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Plug Load Equipment Control - Vending Machine		**3,224**	**0.0**	**0.0**	**$384.61**	**$460.00**	**$0.00**	**$460.00**	**1.2**	**3,246**
ECM 10	Vending Machine Control	3,224	0.0	0.0	$384.61	$460.00	$0.00	$460.00	1.2	3,246

ECM 10: Vending Machine Control

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
3,224	0.0	0.0	$384.61	$460.00	$0.00	$460.00	1.2	3,246

Measure Description

Vending machines operate continuously, even during non-business hours. It is recommended to install occupancy sensor controls to reduce the energy use. These controls power down vending machines when the vending machine area has been vacant for some time, then power up at regular intervals, as needed, to turn machine lights on or keep the product cool. Energy savings are a dependent on vending machine and activity level in the area surrounding the machines.

4.2 ECMs Evaluated But Not Recommended

The measures below have been evaluated by the auditor but are not recommended for implementation at the facility. Reasons for exclusion can be found in each measure description section.

Figure 23 – Summary of Measures Evaluated, But Not Recommended

Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement	**0**	**0.0**	**84.2**	**$700.86**	**$49,427.82**	**$2,153.00**	**$47,274.82**	**67.5**	**9,857**
Install High Efficiency Hot Water Boilers	0	0.0	38.2	$317.67	$14,762.10	$1,353.00	$13,409.10	42.2	4,468
Install High Efficiency Furnaces	0	0.0	46.0	$383.19	$34,665.72	$800.00	$33,865.72	88.4	5,389
Food Service Equipment & Refrigeration Measures	**107**	**0.0**	**0.0**	**$12.72**	**$1,037.21**	**$100.00**	**$937.21**	**73.7**	**107**
Refrigeration Controls	107	0.0	0.0	$12.72	$1,037.21	$100.00	$937.21	73.7	107
TOTALS	**107**	**0.0**	**84.2**	**$713.58**	**$50,465.03**	**$2,253.00**	**$48,212.03**	**67.6**	**9,964**

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

Install High Efficiency Hot Water Boilers

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
0	0.0	38.2	$317.67	$14,762.10	$1,353.00	$13,409.10	42.2	4,468

Measure Description

We evaluated replacing older inefficient hot water boilers with high efficiency hot water boilers. Significant improvements have been made in combustion technology resulting in increased overall boiler efficiency. Energy savings results from improved combustion efficiency and reduced standby losses at low loads.

The most notable efficiency improvement is condensing hydronic boilers that can achieve over 90% efficiency under the proper conditions. Condensing hydronic boilers typically operate at efficiencies between 85% and 87% (comparable to other high efficiency boilers) when the return water temperature is above 130°F. The boiler efficiency increases as the return water temperature drops below 130°F. Therefore, condensing hydronic boilers were only evaluated when the return water temperature is less than 130°F during most of the operating hours.

Reasons for not Recommending

Payback period is too long.

Install High Efficiency Furnaces

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
0	0.0	46.0	$383.19	$34,665.72	$800.00	$33,865.72	88.4	5,389

Measure Description

We evaluated replacing existing standard efficiency furnaces with condensing furnaces. Improved combustion technology and heat exchanger design optimize heat recovery from the combustion gases which can significantly improve furnace efficiency. Savings result from improved system efficiency.

Reasons for not Recommending

Payback period is too long.

Walk-In Cooler and Freezer Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
107	0.0	0.0	$12.72	$1,037.21	$100.00	$937.21	73.7	107

Measure Description

We evaluated the installation of additional controls to optimize the operation of walk-in coolers and freezers.

Many walk-in coolers and freezers have continuously operating electric heaters on the doors to prevent condensation formation. This measure adds a control system feature to shut off the door heaters when the humidity level is low enough that condensation will not occur if the heaters are off. This is accomplished by measuring the ambient humidity and temperature of the store, comparing that to the dewpoint, and using pulse width modulation to control the anti-sweat door heaters.

Defrost controllers can be used to override defrost of evaporator fans when the defrost operation is not necessary, reducing annual energy consumption. This measure is applicable to existing evaporator fans with a traditional electric defrost mechanism.

Energy savings for each of the control measures account for reduction in compressor and fan operating hours as well as reduction in the refrigeration heat load as appropriate.

Reasons for not Recommending

Payback period is too long.

5 ENERGY EFFICIENT PRACTICES

In addition to the quantifiable savings estimated in Section 4, a facility's energy performance can also be improved through application of many low cost or no-cost energy efficiency strategies. By employing certain behavioral and operational changes and performing routine maintenance on building systems, equipment lifetime can be extended; occupant comfort, health and safety can be improved; and energy and O&M costs can be reduced. The recommendations below are provided as a framework for developing a whole building maintenance plan that is customized to your facility. Consult with qualified equipment specialists for details on proper maintenance and system operation.

Reduce Air Leakage

Air leakage, or infiltration, occurs when outside air enters a building uncontrollably through cracks and openings. Properly sealing such cracks and openings can significantly reduce heating and cooling costs, improve building durability, and create a healthier indoor environment. This includes caulking or installing weather stripping around leaky doors and windows allowing for better control of indoor air quality through controlled ventilation.

Close Doors and Windows

Ensure doors and windows are closed in conditioned spaces. Leaving doors and windows open leads to a significant increase in heat transfer between conditioned spaces and the outside air. Reducing a facility's air changes per hour (ACH) can lead to increased occupant comfort as well as significant heating and cooling savings, especially when combined with proper HVAC controls and adequate ventilation.

Use Window Treatments/Coverings

A substantial amount of heat gain can occur through uncovered or untreated windows, especially older single pane windows and east or west-facing windows. Treatments such as high-reflectivity films or covering windows with shades or shutters can reduce solar heat gain and, consequently, cooling load and can reduce internal heat loss and the associated heating load.

Perform Regular Lighting Maintenance

In order to sustain optimal lighting levels, lighting fixtures should undergo routine maintenance. Light levels decrease over time due to lamp aging, lamp and ballast failure, and buildup of dirt and dust on lamps, fixtures and reflective surfaces. Together, these factors can reduce total illumination by 20% - 60% or more, while operating fixtures continue drawing full power. To limit this reduction, lamps, reflectors and diffusers should be thoroughly cleaned of dirt, dust, oil, and smoke film buildup approximately every 6 – 12 months.

Develop a Lighting Maintenance Schedule

In addition to routine fixture cleaning, development of a maintenance schedule can both ensure maintenance is performed regularly and can reduce the overall cost of fixture re-lamping and re-ballasting. By re-lamping and re-ballasting fixtures in groups, lighting levels are better maintained and the number of site visits by a lighting technician or contractor can be minimized, decreasing the overall cost of maintenance.

Ensure Lighting Controls Are Operating Properly

Lighting controls are very cost effective energy efficient devices, when installed and operating correctly. As part of a lighting maintenance schedule, lighting controls should be tested annually to ensure proper functioning. For occupancy sensors, this requires triggering the sensor and verifying that the sensor's timer settings are correct. For daylight sensors, maintenance involves cleaning of sensor lenses and confirming setpoints and sensitivity are appropriately configured.

Perform Routine Motor Maintenance

Motors consist of many moving parts whose collective degradation can contribute to a significant loss of motor efficiency. In order to prevent damage to motor components, routine maintenance should be performed. This maintenance consists of cleaning surfaces and ventilation openings on motors to prevent overheating, lubricating moving parts to reduce friction, inspecting belts and pulleys for wear and to ensure they are at proper alignment and tension, and cleaning and lubricating bearings. Consult a licensed technician to assess these and other motor maintenance strategies.

Use Fans to Reduce Cooling Load

Utilizing ceiling fans to supplement cooling is a low cost strategy to reduce cooling load considerably. Thermostat settings can be increased by 4°F with no change in overall occupant comfort when the wind chill effect of moving air is employed for cooling.

Practice Use of Thermostat Schedules and Temperature Resets

Ensure thermostats are correctly set back. By employing proper set back temperatures and schedules, facility heating and cooling costs can be reduced dramatically during periods of low or no occupancy. As such, thermostats should be programmed for a setback of 5-10°F during low occupancy hours (reduce heating setpoints and increase cooling setpoints). Cooling load can be reduced further by increasing the facility's occupied setpoint temperature. In general, during the cooling season, thermostats should be set as high as possible without sacrificing occupant comfort.

Ensure Economizers are Functioning Properly

Economizers, when properly configured, can be used to significantly reduce mechanical cooling. However, if the outdoor thermostat or enthalpy control is malfunctioning or the damper is stuck or improperly adjusted, benefits from the economizer may not be fully realized. As such, periodic inspection and maintenance is required to ensure proper operation. This maintenance should be scheduled with maintenance of the facility's air conditioning system and should include proper setting of the outdoor thermostat/enthalpy control, inspection of control and damper operation, lubrication of damper connections, and adjustment of minimum damper position. A malfunctioning economizer can significantly increase the amount of heating and mechanical cooling required by introducing excess amounts of cold or hot outside air.

Clean Evaporator/Condenser Coils on AC Systems

Dirty evaporators and condensers coils cause a restriction to air flow and restrict heat transfer. This results in increased evaporator and condenser fan load and a decrease in cooling system performance. Keeping the coils clean allows the fans and cooling system to operate more efficiently.

Clean and/or Replace HVAC Filters

Air filters work to reduce the amount of indoor air pollution and increase occupant comfort. Over time, filters become less and less effective as particulate buildup increases. In addition to health concerns related to clogged filters, filters that have reached saturation also restrict air flow through the facility's air conditioning or heat pump system, increasing the load on the distribution fans and decreasing occupant comfort levels. Filters should be checked monthly and cleaned or replaced when appropriate.

Perform Regular Boiler Maintenance

Many boiler problems develop slowly over time, so regular inspection and maintenance is essential to retain proper functionality and efficiency of the heating system. Fuel burning equipment should undergo yearly tune-ups to ensure they are operating as safely and efficiently as possible from a combustion standpoint. A tune-up should include a combustion analysis to analyze the exhaust from the boilers and to ensure the boiler is operating safely. Buildup of dirt, dust, or deposits on the internal surfaces of a boiler can greatly affect its heat transfer efficiency. These deposits can accumulate on the water side or fire side of the boiler. Boilers should be cleaned regularly according to the manufacturer's instructions to remove this build up in order to sustain efficiency and equipment life.

Perform Regular Water Heater Maintenance

At least once a year, drain a few gallons out of the water heater using the drain valve. If there is a lot of sediment or debris, then a full flush is recommended. Turn the temperature down and then completely drain the tank. Once a year check for any leaks or heavy corrosion on the pipes and valves. For gas water heaters, check the draft hood and make sure it is placed properly, with a few inches of air space between the tank and where it connects to the vent. Look for any corrosion or wear on the gas line and on the piping. If you noticed any black residue, soot or charred metal, this is a sign you may be having combustion issues and you should have the unit serviced by a professional. For electric water heaters, look for any signs of leaking such as rust streaks or residue around the upper and lower panels covering the electrical components on the tank. For water heaters over three to four years old have a technician inspect the sacrificial anode annually.

Plug Load Controls

There are a variety of ways to limit the energy use of plug loads including increasing occupant awareness, removing under-utilized equipment, installing hardware controls, and using software controls. Some control steps to take are to enable the most aggressive power settings on existing devices or install load sensing or occupancy sensing (advanced) power strips. For additional information refer to "Plug Load Best Practices Guide" http://www.advancedbuildings.net/plug-load-best-practices-guide-offices.

Water Conservation

Installing low-flow faucets or faucet aerators, low-flow showerheads, and kitchen sink pre-rinse spray valves saves both energy and water. These devices save energy by reducing the overall amount of hot water used hence reducing the energy used to heat the water. The flow ratings for EPA WaterSense™ (http://www3.epa.gov/watersense/products) labeled devices are 1.5 gpm for bathroom faucets, 2.0 gpm for showerheads, and 1.28 gpm for pre-rinse spray valves.

Installing dual flush or low-flow toilets and low-flow or waterless urinals are additional ways to reduce the sites water use, however, these devices do not provide energy savings at the site level. Any reduction in water use does however ultimately reduce grid level electricity use since a significant amount of electricity is used to deliver water from reservoirs to end users. The EPA WaterSense™ ratings for urinals is 0.5 gpf and toilets that use as little as 1.28 gpf (this is lower than the current 1.6 gpf federal standard).

6 On-Site Generation Measures

On-site generation measure options include both renewable (e.g., solar, wind) and non-renewable (e.g., fuel cells) on-site technologies that generate power to meet all or a portion of the electric energy needs of a facility, often repurposing any waste heat where applicable. Also referred to as distributed generation, these systems contribute to Greenhouse Gas (GHG) emission reductions, demand reductions and reduced customer electricity purchases, resulting in the electric system reliability through improved transmission and distribution system utilization.

The State of New Jersey's Energy Master Plan (EMP) encourages new distributed generation of all forms and specifically focuses on expanding use of combined heat and power (CHP) by reducing financial, regulatory and technical barriers and identifying opportunities for new entries. The EMP also outlines a goal of 70% of the State's electrical needs to be met by renewable sources by 2050.

Preliminary screenings were performed to determine the potential that a generation project could provide a cost-effective solution for your facility. Before making a decision to implement, a feasibility study should be conducted that would take a detailed look at existing energy profiles, siting, interconnection, and the costs associated with the generation project including interconnection costs, departing load charges, and any additional special facilities charges.

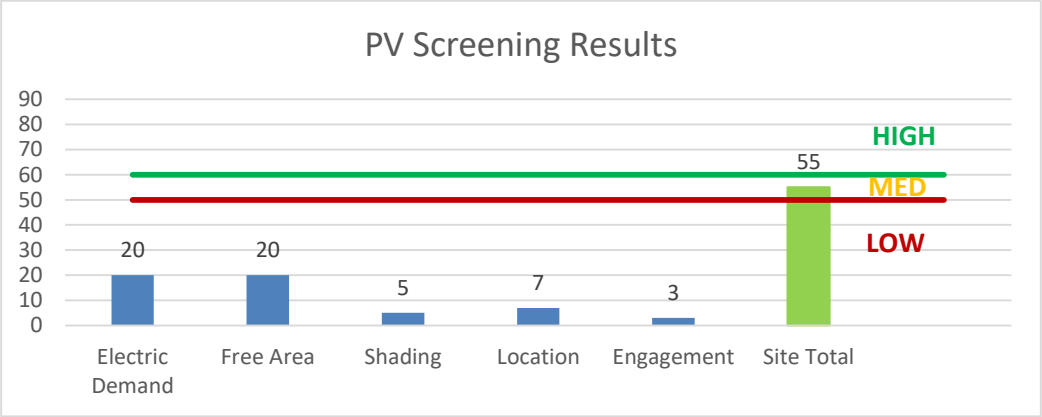
6.1 Photovoltaic

Sunlight can be converted into electricity using photovoltaics (PV) modules. Modules are racked together into an array that produces direct current (DC) electricity. The DC is converted to alternating current (AC) through an inverter. The inverter is interconnected to the facility's electrical distribution system. The amount of unobstructed area available determines how large of a solar array can be installed. The size of the array combined with the orientation, tilt, and shading elements determines the energy produced.

A preliminary screening based on the facility's electric demand, size and location of free area, and shading elements shows that the facility has a **medium** potential for installing a PV array.

The amount of free area, ease of installation (location), and the lack of shading elements contribute to the **medium** potential for additional PV at the site. A PV array located on the roof of the main building/ground next to the building/over the main parking lot may be feasible. If High School South is interested in pursuing the installation of PV, we recommended a full feasibility study be conducted.

Figure 24 - Photovoltaic Screening



Potential	Medium	
System Potential	788	kW DC STC
Electric Generation	592,926	kWh/yr
Displaced Cost	$51,580	/yr
Installed Cost	$3,278,100	

Solar projects must register their projects in the SREC (Solar Renewable Energy Certificate) Registration Program (SRP) prior to the start of construction in order to establish the project's eligibility to earn SRECs. Registration of the intent to participate in New Jersey's solar marketplace provides market participants with information about developed new solar projects and insight into future SREC pricing. Refer to Section 8.3 for additional information.

For more information on solar PV technology and commercial solar markets in New Jersey, or to find a qualified solar installer, who can provide a more detailed assessment of the specific costs and benefits of solar develop of the site, please visit the following links below:

- **Basic Info on Solar PV in NJ**: http://www.njcleanenergy.com/whysolar
- **NJ Solar Market FAQs**: http://www.njcleanenergy.com/renewable-energy/program-updates-and-background-information/solar-transition/solar-market-faqs
- **Approved Solar Installers in the NJ Market**: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/tools-and-resources/tradeally/approved_vendorsearch/?id=60&start=1

6.2 Combined Heat and Power

Combined heat and power (CHP) is the on-site generation of electricity along with the recovery of heat energy, which is put to beneficial use. Common technologies for CHP include reciprocating engines, microturbines, fuel cells, backpressure steam turbines, and (at large facilities) gas turbines. Electric generation from a CHP system is typically interconnected to local power distribution systems. Heat is recovered from exhaust and ancillary cooling systems and interconnected to the existing hot water (or steam) distribution systems.

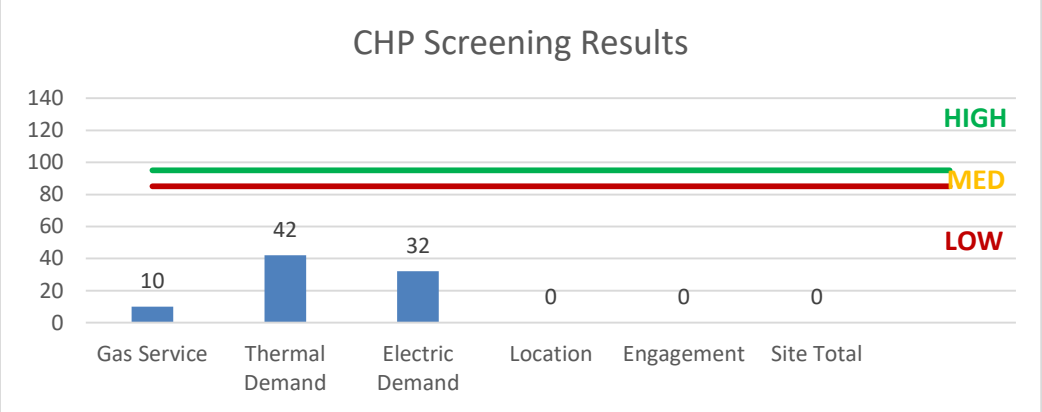
CHP systems are typically used to produce a portion of the electric power used onsite by a facility, with the balance of electric power needs supplied by grid purchases. The heat is used to supplement (or supplant) existing boilers for the purpose of space heating and/or domestic hot water heating. Waste heat can also be routed through absorption chillers for the purpose of space cooling. The key criteria used for screening, however, is the amount of time the system operates at full load and the facility's ability to use the recovered heat. Facilities with continuous use for large quantities of waste heat are the best candidates for CHP.

A preliminary screening based on heating and electrical demand, siting, and interconnection shows that the facility has a **low** potential for installing a cost-effective CHP system.

Lack of gas service, low or infrequent thermal load, and lack of space near the existing boilers are the most significant factors contributing to the potential for CHP at the site. In our opinion, the facility does not appear to meet the minimum requirements for a cost-effective CHP installation.

For a list of qualified firms in New Jersey specializing in commercial CHP cost assessment and installation, go to: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/tools-and-resources/tradeally/approved_vendorsearch/.

Figure 25 - Combined Heat and Power Screening



7 DEMAND RESPONSE

Demand Response (DR) is a program designed to reduce the electric load of commercial facilities when electric wholesale prices are high or when the reliability of the electric grid is threatened due to peak demand. Demand Response service providers (a.k.a. Curtailment Service Providers) are registered with PJM, the independent system operator (ISO) for mid-Atlantic state region that is charged with maintaining electric grid reliability.

By enabling grid operators to call upon Curtailment Service Providers and commercial facilities to reduce electric usage during times of peak demand, the grid is made more reliable and overall transmission costs are reduced for all ratepayers. Curtailment Service Providers provide regular payments to medium and large consumers of electric power for their participation in DR programs. Program participation is voluntary and participants receive payments whether or not their facility is called upon to curtail their electric usage.

Typically an electric customer needs to be capable of reducing their electric demand, within minutes, by at least 100 kW or more in order to participate in a DR program. Customers with a greater capability to quickly curtail their demand during peak hours will receive higher payments. Customers with back-up generators onsite may also receive additional DR payments for their generating capacity if they agree to run the generators for grid support when called upon. Eligible customers who have chosen to participate in a DR programs often find it to be a valuable source of revenue for their facility because the payments can significantly offset annual electric costs.

Participating customers can often quickly reduce their peak load through simple measures, such as temporarily raising temperature set points on thermostats, so that air conditioning units run less frequently, or agreeing to dim or shut off less critical lighting. This usually requires some level of building automation and controls capability to ensure rapid load reduction during a DR curtailment event. DR program participants may need to install smart meters or may need to also sub-meter larger energy-using equipment, such as chillers, in order to demonstrate compliance with DR program requirements.

DR does not include the reduction of electricity consumption based on normal operating practice or behavior. For example, if a company's normal schedule is to close for a holiday, the reduction of electricity due to this closure or scaled-back operation is not considered a demand response activity in most situations.

The first step toward participation in a DR program is to contact a Curtailment Service Provider. A list of these providers is available on PJM's website and it includes contact information for each company, as well as the states where they have active business (http://www.pjm.com/markets-and-operations/demand-response/csps.aspx). PJM also posts training materials that are developed for program members interested in specific rules and requirements regarding DR activity (http://www.pjm.com/training/training%20material.aspx), along with a variety of other DR program information.

Curtailment Service Providers typically offer free assessments to determine a facility's eligibility to participate in a DR program. They will provide details regarding program rules and requirements for metering and controls, assess a facility's ability to temporarily reduce electric load, and provide details on payments to be expected for participation in the program. Providers usually offer multiple options for DR to larger facilities and may also install controls or remote monitoring equipment of their own to help ensure compliance with all terms and conditions of a DR contract.

It is the opinion of TRC that this project would not be a good fit for Demand Response (DR).

8 PROJECT FUNDING / INCENTIVES

The NJCEP is able to provide the incentive programs described below, and other benefits to ratepayers, because of the Societal Benefits Charge (SBC) Fund. The SBC was created by the State of New Jersey's Electricity Restructuring Law (1999), which requires all customers of investor-owned electric and gas utilities to pay a surcharge on their monthly energy bills. As a customer of a state-regulated electric or gas utility and therefore a contributor to the fund your organization is eligible to participate in the LGEA program and also eligible to receive incentive payment for qualifying energy efficiency measures. Also available through the NJBPU are some alternative financing programs described later in this section. Please refer to Figure 26 for a list of the eligible programs identified for each recommended ECM.

Figure 26 - ECM Incentive Program Eligibility

Energy Conservation Measure		SmartStart Prescriptive	SmartStart Custom	Direct Install	Pay For Performance Existing Buildings	Large Energy Users Program	Combined Heat & Power and Fuel Cell
ECM 1	Install LED Fixtures	X			X		
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	X			X		
ECM 3	Retrofit Fixtures with LED Lamps	X			X		
ECM 4	Install Occupancy Sensor Lighting Controls	X			X		
ECM 5	Install High/Low Lighitng Controls	X			X		
ECM 6	Premium Efficiency Motors				X		
ECM 7	Install VFDs on Chilled Water Pumps	X			X		
ECM 8	Install VFDs on Hot Water Pumps				X		
ECM 9	Install High Efficiency Chillers				X		
ECM 10	Vending Machine Control	X			X		

SmartStart is generally well-suited for implementation of individual measures or small group of measures. It provides flexibility to install measures at your own pace using in-house staff or a preferred contractor. Direct Install caters to small to mid-size facilities that can bundle multiple ECMs together. This can greatly simplify participation and may lead to higher incentive amounts, but requires the use of pre-approved contractors. The Pay for Performance (P4P) program is a "whole-building" energy improvement program designed for larger facilities. It requires implementation of multiple measures meeting minimum savings thresholds, as well as use of pre-approved consultants. The Large Energy Users Program (LEUP) is available to New Jersey's largest energy users giving them flexibility to install as little or as many measures, in a single facility or several facilities, with incentives capped based on the entity's annual energy consumption. LEUP applicants can use in-house staff or a preferred contractor.

Generally, the incentive values provided throughout the report assume the SmartStart program is utilized because it provides a consistent basis for comparison of available incentives for various measures, though in many cases incentive amounts may be higher through participation in other programs.

Brief descriptions of all relevant financing and incentive programs are located in the sections below. Further information, including most current program availability, requirements, and incentive levels can be found at: www.njcleanenergy.com/ci.

8.1 SmartStart

Overview

The SmartStart program offers incentives for installing prescriptive and custom energy efficiency measures at your facility. Routinely the program adds, removes or modifies incentives from year to year for various energy efficiency equipment based on market trends and new technologies.

Equipment with Prescriptive Incentives Currently Available:

Electric Chillers
Electric Unitary HVAC
Gas Cooling
Gas Heating
Gas Water Heating
Ground Source Heat Pumps
Lighting
Lighting Controls
Refrigeration Doors
Refrigeration Controls
Refrigerator/Freezer Motors
Food Service Equipment
Variable Frequency Drives

Most equipment sizes and types are served by this program. This program provides an effective mechanism for securing incentives for energy efficiency measures installed individually or as part of a package of energy upgrades.

Incentives

The SmartStart prescriptive incentive program provides fixed incentives for specific energy efficiency measures, whereas the custom SmartStart program provides incentives for more unique or specialized technologies or systems that are not addressed through prescriptive incentive offerings for specific devices.

Since your facility is an existing building, only the retrofit incentives have been applied in this report. Custom measure incentives are calculated at $0.16/kWh and $1.60/therm based on estimated annual savings, capped at 50% of the total installed incremental project cost, or a project cost buy down to a one year payback (whichever is less). Program incentives are capped at $500,000 per electric account and $500,000 per natural gas account, per fiscal year.

How to Participate

To participate in the SmartStart program you will need to submit an application for the specific equipment to be installed. Many applications are designed as rebates, although others require application approval prior to installation. Applicants may work with a contractor of their choosing and can also utilize internal personnel, which provides added flexibility to the program. Using internal personnel also helps improve the economics of the ECM by reducing the labor cost that is included in the tables in this report.

Detailed program descriptions, instructions for applying and applications can be found at: www.njcleanenergy.com/SSB.

8.2 Pay for Performance - Existing Buildings

Overview

The Pay for Performance – Existing Buildings (P4P EB) program is designed for larger customers with a peak demand over 200 kW in any of the preceding 12 months. Under this program the minimum installed scope of work must include at least two unique measures resulting in at least 15% energy savings, where lighting cannot make up the majority of the savings. P4P is a generally a good option for medium to large sized facilities looking to implement as many measures as possible under a single project in order to achieve deep energy savings. This program has an added benefit of evaluating a broad spectrum of measures that may not otherwise qualify under other programs. Many facilities pursuing an Energy Savings Improvement Program (ESIP) loan also utilize the P4P program.

Incentives

Incentives are calculated based on estimated and achieved energy savings ranging from $0.18-$0.22/kWh and $1.80-$2.50/therm, capped at the lesser of 50% total project cost, or $1 million per electric account and $1 million per natural gas account, per fiscal year, not to exceed $2 million per project. An incentive of $0.15/square foot is also available to offset the cost of developing the Energy Reduction Plan (see below) contingent on the project moving forward with measure installation.

How to Participate

To participate in the P4B EB program you will need to contact one of the pre-approved consultants and contractors ("Partners"). Under direct contract to you, the Partner will help further evaluate the measures identified in this report through development of the Energy Reduction Plan (ERP), assist you in implementing selected measures, and verify actual savings one year after the installation. At each of these three milestones your Partner will also facilitate securing program incentives.

Approval of the final scope of work is required by the program prior to installation completion. Although installation can be accomplished by a contractor of your choice (some P4P Partners are also contractors) or by internal personnel, the Partner must remain involved to ensure compliance with the program guidelines and requirements.

Detailed program descriptions, instructions for applying, applications and list of Partners can be found at: www.njcleanenergy.com/P4P.

8.3 SREC Registration Program

The SREC (Solar Renewable Energy Certificate) Registration Program (SRP) is used to register the intent to install solar projects in New Jersey. Rebates are not available for solar projects, but owners of solar projects MUST register their projects in the SRP prior to the start of construction in order to establish the project's eligibility to earn SRECs. Registration of the intent to participate in New Jersey's solar marketplace provides market participants with information about the pipeline of anticipated new solar capacity and insight into future SREC pricing.

After the registration is accepted, construction is complete, and final paperwork has been submitted and is deemed complete, the project is issued a New Jersey certification number which enables it to generate New Jersey SRECs. SREC's are generated once the solar project has been authorized to be energized by the Electric Distribution Company (EDC).

Each time a solar installation generates 1,000 kilowatt-hours (kWh) of electricity, an SREC is earned. Solar project owners report the energy production to the SREC Tracking System. This reporting allows SREC's to be placed in the customer's electronic account. SRECs can then be sold on the SREC Tracking System, providing revenue for the first 15 years of the project's life.

Electricity suppliers, the primary purchasers of SRECs, are required to pay a Solar Alternative Compliance Payment (SACP) if they do not meet the requirements of New Jersey's Solar RPS. One way they can meet the RPS requirements is by purchasing SRECs. As SRECs are traded in a competitive market, the price may vary significantly. The actual price of an SREC during a trading period can and will fluctuate depending on supply and demand.

Information about the SRP can be found at: www.njcleanenergy.com/srec.

8.4 Energy Savings Improvement Program

The Energy Savings Improvement Program (ESIP) is an alternate method for New Jersey's government agencies to finance the implementation of energy conservation measures. An ESIP is a type of "performance contract," whereby school districts, counties, municipalities, housing authorities and other public and state entities enter in to contracts to help finance building energy upgrades. This is done in a manner that ensures that annual payments are lower than the savings projected from the ECMs, ensuring that ESIP projects are cash flow positive in year one, and every year thereafter. ESIP provides government agencies in New Jersey with a flexible tool to improve and reduce energy usage with minimal expenditure of new financial resources. NJCEP incentive programs can be leveraged to help further reduce the total project cost of eligible measures.

This LGEA report is the first step to participating in ESIP. Next, you will need to select an approach for implementing the desired ECMs:

(1) Use an Energy Services Company or "ESCO."
(2) Use independent engineers and other specialists, or your own qualified staff, to provide and manage the requirements of the program through bonds or lease obligations.
(3) Use a hybrid approach of the two options described above where the ESCO is utilized for some services and independent engineers, or other specialists or qualified staff, are used to deliver other requirements of the program.

After adopting a resolution with a chosen implementation approach, the development of the Energy Savings Plan (ESP) can begin. The ESP demonstrates that the total project costs of the ECMs are offset by the energy savings over the financing term, not to exceed 15 years. The verified savings will then be used to pay for the financing.

The ESIP approach may not be appropriate for all energy conservation and energy efficiency improvements. Entities should carefully consider all alternatives to develop an approach that best meets their needs. A detailed program descriptions and application can be found at: www.njcleanenergy.com/ESIP.

Please note that ESIP is a program delivered directly by the NJBPU and is not an NJCEP incentive program. As mentioned above, you may utilize NJCEP incentive programs to help further reduce costs when developing the ESP. You should refer to the ESIP guidelines at the link above for further information and guidance on next steps.

9 ENERGY PURCHASING AND PROCUREMENT STRATEGIES

9.1 Retail Electric Supply Options

In 1999, New Jersey State Legislature passed the Electric Discount & Energy Competition Act (EDECA) to restructure the electric power industry in New Jersey. This law deregulated the retail electric markets, allowing all consumers to shop for service from competitive electric suppliers. The intent was to create a more competitive market for electric power supply in New Jersey. As a result, utilities were allowed to charge Cost of Service and customers were given the ability to choose a third-party (i.e. non-utility) energy supplier.

Energy deregulation in New Jersey has increased energy buyers' options by separating the function of electricity distribution from that of electricity supply. So, though you may choose a different company from which to buy your electric power, responsibility for your facility's interconnection to the grid and repair to local power distribution will still reside with the traditional utility company serving your region.

If your facility is not purchasing electricity from a third-party supplier, consider shopping for a reduced rate from third-party electric suppliers. If your facility is purchasing electricity from a third-party supplier, review and compare prices at the end of the current contract or every of couple years.

A list of third-party electric suppliers, who are licensed by the state to provide service in New Jersey, can be found online at: www.state.nj.us/bpu/commercial/shopping.html.

9.2 Retail Natural Gas Supply Options

The natural gas market in New Jersey has also been deregulated. Most customers that remain with the utility for natural gas service pay rates that are market-based and that fluctuate on a monthly basis. The utility provides basic gas supply service (BGSS) to customers who choose not to buy from a third-party supplier for natural gas commodity.

A customer's decision about whether to buy natural gas from a retail supplier is typically dependent upon whether a customer seeks budget certainty and/or longer-term rate stability. Customers can secure longer-term fixed prices by signing up for service through a third-party retail natural gas supplier. Many larger natural gas customers may seek the assistance of a professional consultant to assist in their procurement process.

If your facility is not purchasing natural gas from a third-party supplier, consider shopping for a reduced rate from third-party natural gas suppliers. If your facility is purchasing natural gas from a third-party supplier, review and compare prices at the end of the current contract or every of couple years.

A list of third-party natural gas suppliers, who are licensed by the state to provide service in New Jersey, can be found online at: www.state.nj.us/bpu/commercial/shopping.html.

Appendix A: Equipment Inventory & Recommendations

Lighting Inventory & Recommendations

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,456	Relamp	No	18	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,456	0.34	865	0.0	$103.18	$657.27	$180.00	4.63
Maintenance Hallway	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Maintenance Hallway	4	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	4,992	Relamp	No	4	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.02	207	0.0	$24.66	$68.90	$20.00	1.98
Maintenance Hallway	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.44	3,830	0.0	$456.98	$984.24	$160.00	1.80
Storage Room/Roof Access	3	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.10	91	0.0	$10.92	$51.68	$15.00	3.36
Storage Room/Roof Access	4	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	520	None	No	4	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Storage Room/Roof Access	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26
RR/Locker	1	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	2,112	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,112	0.00	10	0.0	$1.16	$17.23	$5.00	10.55
Kitchen Area	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen Area	31	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,848	Relamp	Yes	31	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,294	0.85	2,747	0.0	$327.77	$1,941.97	$415.00	4.66
Kitchen Area	6	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	1,848	Relamp	No	6	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,848	0.04	115	0.0	$13.69	$103.35	$30.00	5.36
Walk-In Refrigerator	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	4,992	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.03	293	0.0	$34.93	$17.23	$5.00	0.35
Kitchen Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$55.00	11.92
Kitchen Storage	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.17	158	0.0	$18.84	$292.12	$80.00	11.26
Kitchen Water Heater Area	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,848	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,294	0.22	709	0.0	$84.58	$562.12	$115.00	5.29
Kitchen RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,848	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,848	0.02	70	0.0	$8.37	$36.52	$10.00	3.17
Custodial Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.11	405	0.0	$48.33	$416.06	$75.00	7.06
Paper Storage	4	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	4	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.13	122	0.0	$14.55	$68.90	$20.00	3.36
Faculty Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.08	718	0.0	$85.68	$379.55	$65.00	3.67
Faculty Room	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Faculty Room Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.05	262	0.0	$31.24	$343.03	$20.00	10.34
Faculty Room Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.05	262	0.0	$31.24	$343.03	$20.00	10.34
Faculty Room Lounge Area	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,376	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,663	0.33	1,367	0.0	$163.13	$708.18	$155.00	3.39
Faculty Room Lounge Area	2	Linear Fluorescent - T8: 2' T8 (17W) - 4L	Wall Switch	63	2,376	Relamp	Yes	2	LED - Linear Tubes: (4) 2' Lamps	Occupancy Sensor	34	1,663	0.05	214	0.0	$25.56	$400.06	$75.00	12.72
Faculty Room Lounge Area	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,376	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,663	0.27	1,139	0.0	$135.94	$635.15	$135.00	3.68

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Faculty Room Sotrage Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26
CR 90	20	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	20	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.96	4,457	0.0	$531.73	$2,000.60	$470.00	2.88
CR 90	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,848	0.06	265	0.0	$31.66	$343.03	$55.00	9.10
CR 91	25	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.68	3,165	0.0	$377.61	$1,452.88	$320.00	3.00
CR 91	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,848	0.06	265	0.0	$31.66	$343.03	$55.00	9.10
CR 91	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 92	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.77	3,565	0.0	$425.39	$1,708.48	$390.00	3.10
CR 92	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,848	0.06	265	0.0	$31.66	$343.03	$55.00	9.10
CR 92	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
WWP EA Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.11	405	0.0	$48.33	$416.06	$75.00	7.06
CR 93/94	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 93/94	29	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	29	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.79	3,671	0.0	$438.03	$1,598.94	$360.00	2.83
CR 93/94	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,848	0.11	531	0.0	$63.32	$416.06	$75.00	5.39
CR 95	17	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	17	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.82	3,788	0.0	$451.97	$1,511.51	$375.00	2.51
CR 95	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,640	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,640	0.01	49	0.0	$5.80	$32.52	$10.00	3.88
CR 95	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
School Store	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	1,320	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	924	0.16	380	0.0	$45.31	$489.09	$95.00	8.70
100 Wing Custodial Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26
CR 101	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.77	3,565	0.0	$425.39	$1,438.48	$355.00	2.55
CR 103	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.77	3,565	0.0	$425.39	$1,438.48	$355.00	2.55
CR 102	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.41	1,899	0.0	$226.57	$817.73	$185.00	2.79
Prep Room 101	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.08	380	0.0	$45.31	$379.55	$65.00	6.94
100 Wing Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,730	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,730	0.02	110	0.0	$13.11	$36.52	$10.00	2.02
100 Wing Women's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.08	393	0.0	$46.86	$379.55	$65.00	6.71
100 Wing Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,730	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,730	0.02	110	0.0	$13.11	$36.52	$10.00	2.02

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
100 Wing Men's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.08	393	0.0	$46.86	$379.55	$65.00	6.71
CR 100	9	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	9	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	1,848	0.23	1,063	0.0	$126.81	$922.14	$35.00	7.00
CR 104 A/B	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.58	2,674	0.0	$319.04	$1,146.36	$275.00	2.73
CR 106 A/B	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.33	1,519	0.0	$181.25	$708.18	$155.00	3.05
CR 108 A/B	11	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	11	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.53	2,451	0.0	$292.45	$1,073.33	$255.00	2.80
CR 108 A/B Restroom	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	1,848	0.03	118	0.0	$14.09	$188.46	$0.00	13.38
Science Workroom	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.25	912	0.0	$108.75	$598.64	$125.00	4.36
Science Workroom RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	730	None	No	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Copy Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Copy Room Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
CR 110	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.25	1,139	0.0	$135.94	$598.64	$125.00	3.48
CR 112	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
CR 114	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.41	1,899	0.0	$226.57	$817.73	$185.00	2.79
Prep Room 102	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.11	506	0.0	$60.42	$416.06	$75.00	5.65
CR 113	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.44	2,026	0.0	$241.67	$854.24	$195.00	2.73
CR 208	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.25	1,139	0.0	$135.94	$598.64	$125.00	3.48
CR 208 Chem Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.04	39	0.0	$4.71	$73.03	$20.00	11.26
CR 207	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	0.98	4,558	0.0	$543.76	$1,854.54	$430.00	2.62
CR 205	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	0.98	4,558	0.0	$543.76	$1,854.54	$430.00	2.62
Prep Room 202	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.11	506	0.0	$60.42	$416.06	$75.00	5.65
CR 203	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.44	2,026	0.0	$241.67	$854.24	$195.00	2.73
Prep Room 201	5	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	5	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	0.21	950	0.0	$113.28	$543.86	$110.00	3.83
CR 206	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.41	1,899	0.0	$226.57	$817.73	$185.00	2.79
Prep Room 203	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.11	506	0.0	$60.42	$416.06	$75.00	5.65
CR 204	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.41	1,899	0.0	$226.57	$817.73	$185.00	2.79

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,730	0.02	91	0.0	$10.86	$72.46	$0.00	6.67
Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,730	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,730	0.02	110	0.0	$13.11	$36.52	$10.00	2.02
Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.05	262	0.0	$31.24	$343.03	$55.00	9.22
Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,730	0.02	91	0.0	$10.86	$72.46	$0.00	6.67
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,730	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,730	0.02	110	0.0	$13.11	$36.52	$10.00	2.02
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.05	262	0.0	$31.24	$343.03	$55.00	9.22
CR 202	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
CR 200	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	17	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.46	2,152	0.0	$256.77	$890.76	$205.00	2.67
CR 201	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.44	2,026	0.0	$241.67	$854.24	$195.00	2.73
CR 201	3	Compact Fluorescent: Screw-In (18W) - 2L	Wall Switch	36	2,640	Relamp	Yes	3	LED Screw-In Lamps: Screw-In (9W) - 2L	Occupancy Sensor	18	1,848	0.05	213	0.0	$25.43	$373.35	$0.00	14.68
200 Section Custodial Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26
C 202 Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.04	39	0.0	$4.71	$73.03	$20.00	11.26
250 A	14	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	14	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.45	2,785	0.0	$332.25	$766.82	$210.00	1.68
250 A	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Occupancy Sensor	33	3,494	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.01	64	0.0	$7.67	$32.52	$10.00	2.94
250 B	15	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	15	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.49	2,984	0.0	$355.99	$821.59	$225.00	1.68
250 B	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Occupancy Sensor	33	3,494	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.01	64	0.0	$7.67	$32.52	$10.00	2.94
250 C	15	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	15	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.49	2,984	0.0	$355.99	$821.59	$225.00	1.68
250 C	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Occupancy Sensor	33	3,494	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.01	64	0.0	$7.67	$32.52	$10.00	2.94
250 D	15	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	15	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.49	2,984	0.0	$355.99	$821.59	$225.00	1.68
250 D	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Occupancy Sensor	33	3,494	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.01	64	0.0	$7.67	$32.52	$10.00	2.94
Electrical Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	730	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	730	0.06	83	0.0	$9.92	$109.55	$30.00	8.02
Boy's Team Room	14	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,080	Relamp	Yes	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,456	0.38	1,396	0.0	$166.61	$781.21	$175.00	3.64
Boy's Team Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boy's Locker Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Boy's Locker Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boy's Locker Room Locker Area	29	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	29	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.79	2,937	0.0	$350.42	$1,598.94	$360.00	3.54
Boy's Locker Room Locker Area	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boy's Locker Room Storage Room	14	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	520	Relamp	No	14	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	520	0.16	147	0.0	$17.48	$255.61	$70.00	10.62
Boy's Locker Room Storage Closet	2	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	2	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.07	61	0.0	$7.28	$34.45	$10.00	3.36
Boy's Locker Room Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.11	405	0.0	$48.33	$416.06	$75.00	7.06
Boy's Locker Room Office RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,112	0.02	70	0.0	$8.40	$72.46	$0.00	8.62
Boy's Locker Room Office RR	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	2,112	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,112	0.01	22	0.0	$2.61	$17.23	$5.00	4.69
Boy's Locker Room Office RR	1	Compact Fluorescent: Screw-In (13W) - 2L	Wall Switch	26	2,112	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 2L	Wall Switch	18	2,112	0.01	19	0.0	$2.32	$34.45	$10.00	10.55
Boy's Locker Room Shower Area	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.27	1,013	0.0	$120.84	$635.15	$135.00	4.14
Boy's Locker Room Shower Area	4	Compact Fluorescent: Screw-In (18W) - 2L	Wall Switch	36	2,112	Relamp	Yes	4	LED Screw-In Lamps: Screw-In (9W) - 2L	Occupancy Sensor	18	1,478	0.06	227	0.0	$27.12	$407.80	$35.00	13.74
Boy's Locker Room Toilet Area	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Boy's Locker Area 2+3	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.25	912	0.0	$108.75	$598.64	$125.00	4.36
Boy's Locker Area 2+3	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,112	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Boy's Locker Area 3 Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.04	39	0.0	$4.71	$73.03	$20.00	11.26
Boy's Locker Coach's Area	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,112	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,478	0.19	713	0.0	$85.08	$562.12	$115.00	5.26
Boy's Locker Hallway to Gym	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,112	0.02	80	0.0	$9.56	$36.52	$10.00	2.77
Boy's Locker Hallway to Gym	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Gym Interior Vestibule	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.05	479	0.0	$57.12	$343.03	$20.00	5.66
Girl's Team Room Vestibule	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.08	718	0.0	$85.68	$379.55	$65.00	3.67
Girl's Team Room Vestibule	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Girl's Team Room	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,080	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,456	0.41	1,496	0.0	$178.51	$817.73	$185.00	3.54
Girl's Team Room	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
B-4 Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.04	39	0.0	$4.71	$73.03	$20.00	11.26
Girl's Coach's Locker Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Gym Storage	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	18	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.39	355	0.0	$42.38	$657.27	$180.00	11.26

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Gym Storage WH Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.04	39	0.0	$4.71	$73.03	$20.00	11.26
Weight Room	34	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	No	34	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	4,992	1.10	9,662	0.0	$1,152.72	$1,862.27	$510.00	1.17
Weight Room	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Weight Room Sprinkler Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	730	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	730	0.03	42	0.0	$4.96	$54.77	$15.00	8.02
Training Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.26	1,591	0.0	$189.86	$438.18	$120.00	1.68
Training Room	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Training Room Wet Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.06	398	0.0	$47.46	$109.55	$30.00	1.68
Training Room Wet Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Training Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,112	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,112	0.06	240	0.0	$28.69	$109.55	$30.00	2.77
Training Office RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,112	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,112	0.02	80	0.0	$9.56	$36.52	$10.00	2.77
Athletic Director Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,112	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,112	0.06	240	0.0	$28.69	$109.55	$30.00	2.77
Athletic Director Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,112	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,112	0.06	240	0.0	$28.69	$109.55	$30.00	2.77
Athletic Director Office	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Ticket/Consessions Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	730	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	730	0.13	166	0.0	$19.83	$219.09	$60.00	8.02
Athletic Area Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.02	117	0.0	$13.90	$72.46	$0.00	5.21
Athletic Area Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.09	530	0.0	$63.29	$146.06	$40.00	1.68
Athletic Area Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.02	117	0.0	$13.90	$72.46	$0.00	5.21
Athletic Area Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.09	530	0.0	$63.29	$146.06	$40.00	1.68
Wrestling Gym	12	Linear Fluorescent - T5HO: 4' T5HO (54W) - 6L	Wall Switch	358	4,992	Relamp	Yes	12	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	3,494	2.34	20,467	0.0	$2,441.87	$1,534.54	$395.00	0.47
Wrestling Gym	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Aux Gym	42	Linear Fluorescent - T5HO: 4' T5HO (54W) - 6L	Wall Switch	358	4,992	Relamp	Yes	42	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	3,494	8.18	71,635	0.0	$8,546.54	$5,480.89	$1,400.00	0.48
New Aux Gym	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Aux Gym Storage	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Aux Gym Storage	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.13	118	0.0	$14.13	$219.09	$60.00	11.26
Custodial Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Gyms Hall Women's RR	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.19	916	0.0	$109.34	$525.61	$105.00	3.85
Gyms Hall Women's RR	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
IDF Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	730	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	730	0.02	28	0.0	$3.31	$36.52	$10.00	8.02
Women's RR Vestibule	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,730	0.04	182	0.0	$21.72	$144.92	$0.00	6.67
Women's RR Vestibule	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Women's RR Vestibule	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,730	0.02	104	0.0	$12.36	$36.52	$10.00	2.15
Gyms Hall Men's RR	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.19	916	0.0	$109.34	$525.61	$105.00	3.85
Gyms Hall Vestibule	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.03	239	0.0	$28.56	$306.52	$10.00	10.38
Gyms Hall Vestibule	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Gyms Hall Vestibule	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.05	447	0.0	$53.29	$414.92	$35.00	7.13
Old Gym	48	Linear Fluorescent - T5HO: 4' T5HO (54W) - 4L	Wall Switch	234	4,992	Relamp	Yes	48	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,494	6.09	53,293	0.0	$6,358.23	$4,385.44	$1,100.00	0.52
Old Gym	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Custodial Closet	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.03	30	0.0	$3.64	$17.23	$5.00	3.36
Above Old Gym	5	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	365	Relamp	No	5	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	365	0.17	107	0.0	$12.77	$86.13	$25.00	4.79
Old Gym Storage	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	520	Relamp	No	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	520	0.09	84	0.0	$9.99	$146.06	$40.00	10.62
Electrical Room	4	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	365	None	No	4	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	365	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Girl's Locker Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.22	810	0.0	$96.67	$562.12	$115.00	4.63
Girl's Locker Room	24	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.66	2,431	0.0	$290.00	$1,416.36	$310.00	3.81
Girl's Locker Room	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Girl's Locker Room Toilet Area	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Storage G-3	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.03	30	0.0	$3.64	$17.23	$5.00	3.36
Girl's Locker Room Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	520	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	520	0.05	42	0.0	$4.99	$73.03	$20.00	10.62
Girl's Locker Room Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.11	405	0.0	$48.33	$416.06	$75.00	7.06
Girl's Locker Room Office RR	2	Compact Fluorescent: Screw-In (18W) - 2L	Wall Switch	36	2,112	Relamp	No	2	LED Screw-In Lamps: Screw-In (9W) - 2L	Wall Switch	18	2,112	0.02	87	0.0	$10.43	$68.90	$20.00	4.69
Girl's Locker Room Shower Area	11	Compact Fluorescent: Screw-In (18W) - 2L	Wall Switch	36	2,112	Relamp	Yes	11	LED Screw-In Lamps: Screw-In (9W) - 2L	Occupancy Sensor	18	1,478	0.17	625	0.0	$74.59	$648.95	$35.00	8.23

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Short Hallway from Commons to Gym	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.27	2,394	0.0	$285.61	$565.15	$100.00	1.63
Athletic Director Storage	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	5	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.11	99	0.0	$11.77	$182.58	$50.00	11.26
Electrical Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	365	None	No	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	365	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Girl's Pool Locker Room	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.33	1,215	0.0	$145.00	$708.18	$155.00	3.81
Girl's Pool Locker Room Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Girl's Pool Locker Room Storage	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	520	None	No	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Girl's Pool Locker Room Storage	3	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.10	91	0.0	$10.92	$51.68	$15.00	3.36
Girl's Pool Locker Room Storage	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Girl's Pool Locker Room Shower Area	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Pool Locker Vestibule	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$55.00	11.92
Pool Locker Vestibule	2	Compact Fluorescent: Screw-In (18W) - 2L	Wall Switch	36	2,112	Relamp	No	2	LED Screw-In Lamps: Screw-In (9W) - 2L	Wall Switch	18	2,112	0.02	87	0.0	$10.43	$68.90	$20.00	4.69
Men's Pool Locker Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.19	709	0.0	$84.58	$525.61	$105.00	4.97
Men's Pool Locker Room Toilet Area	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$55.00	11.92
Men's Pool Locker Room Shower Area	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$55.00	11.92
Men's Pool Locker Room Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$55.00	11.92
Pool Mechanical Room	3	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	728	Relamp & Reballast	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	728	0.12	148	0.0	$17.68	$206.32	$30.00	9.97
Pool Mechanical Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Locker Room Hallway	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	1,478	0.16	608	0.0	$72.50	$419.09	$60.00	4.95
Pool Locker Room Hallway	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Bubble	8	Metal Halide: (1) 1000W Lamp	Wall Switch	1,080	2,112	Fixture Replacement	No	8	LED - Fixtures: High-Bay	Wall Switch	300	2,112	4.09	15,156	0.0	$1,808.18	$6,199.06	$1,200.00	2.76
Pool Bubble	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Custodial Closet	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	520	None	No	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Electrical Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26
Men's RR	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	2,730	Relamp	Yes	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Occupancy Sensor	9	1,911	0.04	169	0.0	$20.11	$287.23	$5.00	14.03
Men's RR	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	2,730	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,730	0.01	28	0.0	$3.37	$17.23	$5.00	3.63

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Women's RR	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	2,730	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,730	0.01	28	0.0	$3.37	$17.23	$5.00	3.63
Women's RR	1	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	2,730	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,730	0.00	13	0.0	$1.50	$17.23	$5.00	8.16
CR 303 Art	32	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	32	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	1.31	6,077	0.0	$725.01	$2,292.72	$550.00	2.40
CR 303 Art	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 303 Art Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.04	39	0.0	$4.71	$73.03	$20.00	11.26
CR 303 Art Track Lighting	20	Incandescent: Screw-In (90W) - 1L	Wall Switch	90	2,640	Relamp	No	20	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	14	2,640	1.00	4,645	0.0	$554.19	$344.50	$100.00	0.44
Kiln Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	730	Relamp	No	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	730	0.10	125	0.0	$14.87	$164.32	$45.00	8.02
Paper Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	520	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	520	0.13	118	0.0	$14.13	$219.09	$60.00	11.26
CR 301	32	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	32	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	1.31	6,077	0.0	$725.01	$2,022.72	$515.00	2.08
CR 301	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 301	29	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	2,640	Relamp	Yes	29	LED Screw-In Lamps: Screw-In (9W) - 1L	Occupancy Sensor	9	1,848	1.02	4,728	0.0	$564.08	$769.53	$180.00	1.05
CR 301 Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,112	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,112	0.13	481	0.0	$57.38	$219.09	$60.00	2.77
CR 302	21	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	21	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	0.86	3,988	0.0	$475.79	$1,690.22	$385.00	2.74
CR 302	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Playhouse	36	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,584	Relamp	No	36	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,584	0.68	1,902	0.0	$226.89	$2,608.56	$0.00	11.50
Playhouse	9	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	9	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Playhouse	24	Compact Fluorescent: PL (13W) - 1L	Wall Switch	13	1,584	None	No	24	Compact Fluorescent: PL (13W) - 1L	Wall Switch	13	1,584	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Playhouse	24	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,584	None	No	24	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,584	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Playhouse	2	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	1,584	Relamp	No	2	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,584	0.02	51	0.0	$6.09	$34.45	$10.00	4.02
Playhouse	13	Incandescent: Screw-In (75W) - 1L	Wall Switch	75	1,584	Relamp	No	13	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	11	1,584	0.54	1,510	0.0	$180.11	$223.93	$65.00	0.88
Playhouse Control Room	3	Linear Fluorescent - T8: 2' T8 (17W) - 1L	Wall Switch	22	1,584	Relamp	No	3	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	9	1,584	0.03	74	0.0	$8.80	$48.77	$15.00	3.84
Playhouse Control Room	2	Halogen Incandescent: Screw-In (360W) - 1L	Wall Switch	360	520	None	No	2	Halogen Incandescent: Screw-In (360W) - 1L	Wall Switch	360	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Playhouse Stage Area	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Playhouse Stage Area	3	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	1,584	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,584	0.03	77	0.0	$9.13	$51.68	$15.00	4.02
Playhouse Stage Area	15	Halogen Incandescent: Screw-In (175W) - 1L	Wall Switch	175	520	None	No	15	Halogen Incandescent: Screw-In (175W) - 1L	Wall Switch	175	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Playhouse Storage Room	2	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	520	None	No	2	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mezzanine 1	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	4,992	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.03	293	0.0	$34.93	$17.23	$5.00	0.35
Mezzanine 1	5	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	4,992	Relamp	No	5	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.05	402	0.0	$47.94	$86.13	$25.00	1.27
Playhouse Costume and Dressing Area	10	Incandescent: Screw-In (300W) - 1L	Wall Switch	300	1,584	Relamp	Yes	10	LED Screw-In Lamps: Screw-In (9W) - 1L	Occupancy Sensor	45	1,109	1.76	4,891	0.0	$583.53	$442.25	$85.00	0.61
Mezzanine 2	4	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	4,992	Relamp	No	4	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.04	321	0.0	$38.36	$68.90	$20.00	1.27
Electrical Room	3	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	730	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	730	0.03	35	0.0	$4.21	$51.68	$15.00	8.72
Art Storage	5	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	520	Relamp	No	5	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	520	0.17	152	0.0	$18.19	$86.13	$25.00	3.36
Media Center	7	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	7	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.10	848	0.0	$101.16	$497.61	$105.00	3.88
Media Center Front Desk	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,992	0.13	1,137	0.0	$135.61	$219.09	$60.00	1.17
Media Center	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Media Center	38	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,992	Relamp	Yes	38	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,494	1.83	16,012	0.0	$1,910.37	$3,315.14	$830.00	1.30
Media Center	12	Metal Halide: (1) 150W Lamp	Wall Switch	190	4,992	Fixture Replacement	Yes	12	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	45	3,494	1.25	10,919	0.0	$1,302.71	$2,595.85	$395.00	1.69
Media Center	23	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	4,992	Relamp	Yes	23	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	3,494	1.74	15,198	0.0	$1,813.18	$2,789.54	$725.00	1.14
Media Center	96	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	96	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,494	1.37	12,042	0.0	$1,436.68	$2,562.72	$585.00	1.38
Media Center Center Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.25	2,155	0.0	$257.05	$598.64	$125.00	1.84
Media Center Conference Room	8	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	8	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.11	969	0.0	$115.61	$530.12	$115.00	3.59
Media Center Reference/Storage	11	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	520	None	No	11	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Media Center Reference/Storage 2	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.13	118	0.0	$14.13	$219.09	$60.00	11.26
IDF Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	730	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	730	0.06	83	0.0	$9.92	$109.55	$30.00	8.02
CR 402	19	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	2,640	Relamp	Yes	19	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	1,848	1.43	6,639	0.0	$792.13	$2,351.36	$605.00	2.20
CR 402	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.41	1,899	0.0	$226.57	$817.73	$185.00	2.79
CR 402 Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,112	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,478	0.10	357	0.0	$42.54	$262.06	$60.00	4.75
CR 401	12	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	2,640	Relamp	Yes	12	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	1,848	0.91	4,193	0.0	$500.29	$1,584.54	$395.00	2.38
CR 401	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.05	253	0.0	$30.21	$343.03	$55.00	9.53
CR 401	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
CR 401	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,640	0.02	106	0.0	$12.68	$36.52	$10.00	2.09
400 Connector Hallway	13	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	13	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	1,848	0.36	1,646	0.0	$196.36	$874.70	$130.00	3.79
400 Connector Hallway	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 405	21	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	21	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	0.86	3,988	0.0	$475.79	$1,690.22	$385.00	2.74
CR 405	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 404	42	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	42	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	1.72	7,976	0.0	$951.58	$3,110.45	$735.00	2.50
CR 404	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 404 Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	364	0.11	100	0.0	$11.90	$147.06	$40.00	9.00
CR 404 Storage Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 404 Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	2,112	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,112	0.07	272	0.0	$32.45	$146.06	$40.00	3.27
CR 404 Practice Room Corridor	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.05	253	0.0	$30.21	$343.03	$20.00	10.69
CR 404 Practice Room 5&4	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	2,640	0.07	340	0.0	$40.57	$146.06	$40.00	2.61
CR 404 Practice Room Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	520	None	No	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 404 Mezzanine Storage	12	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	520	None	No	12	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 403	18	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,640	Relamp	No	18	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,640	0.58	2,705	0.0	$322.73	$985.91	$270.00	2.22
CR 403 Practice Room 1	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,640	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,640	0.13	601	0.0	$71.72	$219.09	$60.00	2.22
CR 403 Practice Room 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	2,640	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,640	0.06	301	0.0	$35.86	$109.55	$30.00	2.22
Instrument Storage	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	520	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	520	0.06	59	0.0	$7.06	$109.55	$30.00	11.26
Instrument Storage	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Instrument Repair Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	3,494	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.06	398	0.0	$47.46	$109.55	$30.00	1.68
IDF Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	None	62	8,760	Relamp	Yes	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,132	0.03	420	0.0	$50.12	$152.52	$10.00	2.84
Electrical Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.05	479	0.0	$57.12	$343.03	$20.00	5.66
Theater Stage Area	6	Metal Halide: (1) 250W Lamp	Wall Switch	295	1,584	Fixture Replacement	No	6	LED - Fixtures: Wall-Wash Lights	Wall Switch	75	1,584	0.87	2,405	0.0	$286.88	$1,162.93	$180.00	3.43
Theater Stage Area	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Theater Stage Lights	80	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	1,584	Relamp	No	80	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,584	2.67	7,432	0.0	$886.70	$1,378.00	$400.00	1.10

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Theater Area	71	Halogen Incandescent: Screw-In (250W) - 1L	Wall Switch	250	1,584	Relamp	No	71	LED Screw-In Lamps: Screw-In (75W) - 1L	Wall Switch	75	1,584	8.14	22,633	0.0	$2,700.32	$1,222.98	$355.00	0.32
Theater Area	9	Compact Fluorescent: Screw-In (48W) - 2L	Wall Switch	96	1,584	Relamp	No	9	LED Screw-In Lamps: Screw-In (9W) - 2L	Wall Switch	18	1,584	0.46	1,279	0.0	$152.57	$310.05	$90.00	1.44
Theater Area Wall Lights	42	Incandescent: Screw-In (10W) - 1L	Wall Switch	10	1,584	Relamp	No	42	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	2	1,584	0.23	650	0.0	$77.59	$723.45	$210.00	6.62
Theater Area Wall Lights	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Theater Area Wall Lights	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	1,584	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	1,584	0.02	58	0.0	$6.95	$65.03	$20.00	6.47
Stage Electrical Room	3	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	730	None	No	3	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Stage Electrical Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Spotlights	2	Halogen Incandescent: (1) 575W Lamp	Wall Switch	575	240	None	No	2	Halogen Incandescent: (1) 575W Lamp	Wall Switch	575	240	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Theater Control Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	1,584	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,584	0.13	361	0.0	$43.03	$219.09	$60.00	3.70
Theater Control Room	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	62	1,584	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	1,584	0.02	53	0.0	$6.30	$72.46	$0.00	11.50
Ticket/Consessions Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Occupancy Sensor	93	1,584	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,584	0.13	361	0.0	$43.03	$219.09	$60.00	3.70
Custodian Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	520	0.02	20	0.0	$2.35	$36.52	$10.00	11.26
Women's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.06	398	0.0	$47.46	$109.55	$30.00	1.68
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.02	117	0.0	$13.90	$72.46	$0.00	5.21
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.04	265	0.0	$31.64	$73.03	$20.00	1.68
Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.02	117	0.0	$13.90	$72.46	$0.00	5.21
Behind Stage	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	62	3,494	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.02	117	0.0	$13.90	$72.46	$0.00	5.21
Women's Dressing Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	792	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	792	0.09	120	0.0	$14.34	$146.06	$40.00	7.39
Women's Dressing Room	3	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	792	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	792	0.10	139	0.0	$16.63	$51.68	$15.00	2.21
Women's Dressing Room RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	792	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	792	0.02	30	0.0	$3.59	$36.52	$10.00	7.39
Men's Dressing Room	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	792	Relamp	No	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	792	0.11	150	0.0	$17.93	$182.58	$50.00	7.39
Men's Dressing Room	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Men's Dressing Room	3	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	792	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	792	0.10	139	0.0	$16.63	$51.68	$15.00	2.21
Men's Dressing Room RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	792	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	792	0.02	30	0.0	$3.59	$36.52	$10.00	7.39
Stage Round Room	1	Compact Fluorescent: Screw-In (23W) - 1L	Wall Switch	23	1,584	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	1,584	0.01	26	0.0	$3.04	$17.23	$5.00	4.02

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
CR 501	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
CR 502	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,730	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,911	0.10	461	0.0	$54.99	$262.06	$60.00	3.67
Storage Room (Paper)	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	520	None	No	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Custodial Closet	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.06	59	0.0	$7.06	$109.55	$30.00	11.26
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,730	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,911	0.10	461	0.0	$54.99	$262.06	$60.00	3.67
CR 504	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
CR 506	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
CR 505	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
CR 503	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,640	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,848	0.43	2,006	0.0	$239.28	$927.27	$215.00	2.98
500A/500B Entry	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.08	718	0.0	$85.68	$379.55	$65.00	3.67
500B	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.49	4,309	0.0	$514.10	$927.27	$215.00	1.39
500A	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.33	2,873	0.0	$342.73	$708.18	$155.00	1.61
500A	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.14	1,197	0.0	$142.81	$452.58	$85.00	2.57
500A	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,494	0.11	1,003	0.0	$119.72	$416.06	$75.00	2.85
500A Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$189.03	$20.00	6.99
Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,730	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,911	0.19	922	0.0	$109.97	$562.12	$115.00	4.07
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,730	0.02	91	0.0	$10.86	$72.46	$0.00	6.67
Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,730	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,911	0.19	922	0.0	$109.97	$562.12	$115.00	4.07
Electrical Room	4	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	730	Relamp	Yes	4	LED Screw-In Lamps: Screw-In (9W) - 1L	Occupancy Sensor	9	511	0.14	180	0.0	$21.51	$338.90	$55.00	13.20
600 Section	44	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	44	LED - Linear Tubes: (1) 4' Lamp	High/Low Control	15	3,494	0.63	5,519	0.0	$658.48	$1,403.33	$1,760.00	-0.54
600 Section	85	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	85	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	2.32	20,348	0.0	$2,427.69	$4,303.78	$3,825.00	0.20
600 Section	48	Metal Halide: (1) 400W Lamp	Wall Switch	458	4,992	Fixture Replacement	No	48	LED - Fixtures: Wall-Wash Lights	Wall Switch	120	4,992	10.63	93,139	0.0	$11,112.10	$9,303.41	$1,440.00	0.71
600 Section	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
600 Section	3	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	4,992	Fixture Replacement	No	3	LED - Fixtures: Wall-Wash Lights	Wall Switch	53	4,992	0.30	2,626	0.0	$313.35	$581.46	$90.00	1.57

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
CR 601 A	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,640	0.02	106	0.0	$12.68	$36.52	$10.00	2.09
CR 601 A	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 601 A	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	1,848	1.47	6,813	0.0	$812.81	$1,432.93	$215.00	1.50
CR 600	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 600	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.16	760	0.0	$90.63	$489.09	$95.00	4.35
CR 600	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,848	0.09	398	0.0	$47.49	$379.55	$65.00	6.62
CR 600	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 601 B	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,640	0.02	106	0.0	$12.68	$36.52	$10.00	2.09
CR 601 B	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 601 B	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	1,848	1.47	6,813	0.0	$812.81	$1,432.93	$215.00	1.50
CR 650 A	16	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,640	Relamp	Yes	16	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	1,848	0.22	1,025	0.0	$122.28	$790.24	$195.00	4.87
CR 650 A	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Open Area 600-1000	79	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	4,992	Relamp	Yes	79	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	4.11	36,010	0.0	$4,296.21	$6,769.37	$4,345.00	0.56
Open Area 600-1000	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
1000s Fishbowl	55	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	55	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	1.50	13,167	0.0	$1,570.86	$2,808.33	$2,475.00	0.21
700 Section	43	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	43	LED - Linear Tubes: (1) 4' Lamp	High/Low Control	15	3,494	0.62	5,394	0.0	$643.51	$1,385.07	$1,720.00	-0.52
700 Section	85	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	85	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	2.32	20,348	0.0	$2,427.69	$4,303.78	$3,825.00	0.20
700 Section	48	Metal Halide: (1) 400W Lamp	Wall Switch	458	4,992	Fixture Replacement	Yes	48	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	3,494	11.77	103,059	0.0	$12,295.64	$9,573.41	$1,475.00	0.66
700 Section	2	Exit Signs: LED - 2 W Lamp	Wall Switch	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	Wall Switch	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 700	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 700	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,848	0.09	398	0.0	$47.49	$379.55	$65.00	6.62
CR 700	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,848	0.19	886	0.0	$105.73	$525.61	$105.00	3.98
CR 700	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 701 A	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,640	0.02	106	0.0	$12.68	$36.52	$10.00	2.09
CR 701 A	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	1,848	1.47	6,813	0.0	$812.81	$1,432.93	$215.00	1.50

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
CR 701 A	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 701 B	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,640	0.02	106	0.0	$12.68	$36.52	$10.00	2.09
CR 701 B	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 701 B	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	1,848	1.47	6,813	0.0	$812.81	$1,432.93	$215.00	1.50
800 A	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,494	0.09	753	0.0	$89.79	$379.55	$65.00	3.50
800 A	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.16	1,436	0.0	$171.37	$489.09	$95.00	2.30
800 A	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
800 A	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	4,992	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	3,494	0.66	5,795	0.0	$691.42	$1,432.93	$215.00	1.76
800 B	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,494	0.09	753	0.0	$89.79	$379.55	$65.00	3.50
800 B	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.16	1,436	0.0	$171.37	$489.09	$95.00	2.30
800 B	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
800 B	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	4,992	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	3,494	0.66	5,795	0.0	$691.42	$1,432.93	$215.00	1.76
800 B Storage/Sever Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.06	59	0.0	$7.06	$109.55	$30.00	11.26
Electrical Room	2	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	730	None	No	2	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
800 Section	3	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	4,992	Fixture Replacement	Yes	3	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	3,494	0.33	2,898	0.0	$345.71	$851.46	$125.00	2.10
800 Section	23	Metal Halide: (1) 400W Lamp	Wall Switch	458	4,992	Fixture Replacement	Yes	23	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	3,494	5.64	49,382	0.0	$5,891.66	$4,997.88	$760.00	0.72
800 Section	28	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	28	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,494	0.40	3,512	0.0	$419.03	$1,051.21	$210.00	2.01
800 Section	41	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	41	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	1.12	9,815	0.0	$1,171.00	$2,307.12	$515.00	1.53
800 Section	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 901	6	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	1,848	0.66	3,065	0.0	$365.66	$1,432.93	$215.00	3.33
CR 901	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	2,640	Fixture Replacement	Yes	6	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	120	1,848	1.47	6,813	0.0	$812.81	$1,432.93	$215.00	1.50
CR 901	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,640	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,640	0.02	106	0.0	$12.68	$36.52	$10.00	2.09
Open Area 600-1000	5	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	5	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.13	1,117	0.0	$133.22	$562.30	$175.00	2.91
Open Area 600-1000	15	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	4,992	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.39	3,419	0.0	$407.87	$747.73	$675.00	0.18
Teacher's Prep	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.25	2,155	0.0	$257.05	$598.64	$125.00	1.84

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Sizemore Office	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,112	Relamp	Yes	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	1,478	0.05	178	0.0	$21.27	$189.03	$20.00	7.95
Sizemore Office	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	2,112	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,112	0.03	124	0.0	$14.78	$17.23	$5.00	0.83
Teacher's Prep	1	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	4,992	Relamp	Yes	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,494	0.02	202	0.0	$24.07	$318.77	$15.00	12.62
Teacher's Prep	16	Mercury Vapor: (1) 175W Lamp	Wall Switch	205	4,992	Fixture Replacement	Yes	16	LED - Fixtures: Wall-Wash Lights	Occupancy Sensor	53	3,494	1.76	15,454	0.0	$1,843.80	$3,641.14	$550.00	1.68
Teacher's Prep	3	Exit Signs: LED - 2 W Lamp	Wall Switch	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	Wall Switch	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Teacher's Prep	5	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	Yes	5	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.21	1,795	0.0	$214.21	$543.86	$110.00	2.03
Teacher's Prep Copy Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,992	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,494	0.08	718	0.0	$85.68	$379.55	$65.00	3.67
2nd Floor Mezzanine Teacher's Prep	3	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	3	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,494	0.08	670	0.0	$79.93	$487.38	$35.00	5.66
Phone Room 1	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	730	None	No	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Phone Room 2	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	730	None	No	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
2nd Floor Mezzanine Office 1	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,112	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,112	0.02	78	0.0	$9.27	$65.03	$20.00	4.86
2nd Floor Mezzanine Office 2	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,112	Relamp	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,478	0.06	212	0.0	$25.33	$343.03	$20.00	12.75
2nd Floor Mezzanine Electrical Room	5	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	730	None	No	5	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 1004 Computer Lab	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,640	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,848	0.16	760	0.0	$90.63	$489.09	$95.00	4.35
CR 1004 Computer Lab	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 1004 Computer Lab	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,640	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,640	0.02	88	0.0	$10.50	$72.46	$0.00	6.90
Men's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.08	393	0.0	$46.86	$379.55	$65.00	6.71
Women's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,730	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,911	0.08	393	0.0	$46.86	$379.55	$65.00	6.71
2nd Floor Mezzanine Office 3	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,112	Relamp	Yes	1	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,478	0.04	152	0.0	$18.13	$170.77	$15.00	8.59
Main Office Area	7	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	2,112	Relamp	No	7	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,112	0.04	153	0.0	$18.26	$120.58	$35.00	4.69
Main Office Area	6	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,112	Relamp	Yes	6	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	1,478	0.08	307	0.0	$36.69	$465.09	$95.00	10.09
Main Office Area	20	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.55	2,026	0.0	$241.67	$1,270.30	$270.00	4.14
Attendance Secretary Office 1	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Attendance Secretary Office 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Psychologist Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Anti-Bully Councelor	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.05	479	0.0	$57.12	$343.03	$20.00	5.66
Learning Consultant Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Accounting Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Men's RR	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,730	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,730	0.02	100	0.0	$11.99	$65.03	$20.00	3.76
Women's RR	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,730	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,730	0.02	100	0.0	$11.99	$65.03	$20.00	3.76
Mail Room	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	1,980	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	1,980	0.01	36	0.0	$4.35	$32.52	$10.00	5.18
Coffee Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,980	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,386	0.11	380	0.0	$45.31	$416.06	$75.00	7.53
Coffee Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	1,980	Relamp	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,386	0.06	199	0.0	$23.74	$343.03	$55.00	12.13
Coffee Room	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	1,980	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	1,980	0.01	36	0.0	$4.35	$32.52	$10.00	5.18
Guidance Area	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.14	1,197	0.0	$142.81	$452.58	$85.00	2.57
Guidance Area	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Guidance Area	9	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	9	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.12	1,090	0.0	$130.07	$562.64	$125.00	3.36
Guidance Area CST Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.11	405	0.0	$48.33	$416.06	$75.00	7.06
Guidance Area Conference Room	8	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	8	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.11	969	0.0	$115.61	$530.12	$115.00	3.59
Guidance Area Copy Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.08	718	0.0	$85.68	$379.55	$65.00	3.67
Facchini Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$55.00	11.92
Facchini Office	1	Incandescent: Screw-In (60W) - 1L	Wall Switch	60	2,112	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,112	0.03	124	0.0	$14.78	$17.23	$5.00	0.83
Walsh Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Alberto Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Parrott Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Rooney Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Rooney Office	1	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	2,112	Relamp	No	1	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	2,112	0.01	22	0.0	$2.61	$17.23	$5.00	4.69
Fregosi Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Fregosi Office	2	Compact Fluorescent: Screw-In (18W) - 4L	Wall Switch	72	2,112	Relamp	No	2	LED Screw-In Lamps: Screw-In (9W) - 4L	Wall Switch	36	2,112	0.05	175	0.0	$20.86	$137.80	$40.00	4.69
Smith Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Ass. Princp. Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.08	304	0.0	$36.25	$379.55	$65.00	8.68
Principal's Office	7	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,112	Relamp	Yes	7	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	1,478	0.10	359	0.0	$42.80	$497.61	$105.00	9.17
Principal's Office RR	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	2,112	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,112	0.01	39	0.0	$4.64	$32.52	$10.00	4.86
Guidance Area Conference Room 2	6	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	6	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,494	0.08	727	0.0	$86.71	$465.09	$95.00	4.27
Ass. Princp. Office 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Nurse's Suite	13	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	13	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.36	3,112	0.0	$371.29	$744.70	$165.00	1.56
Nurse's Suite	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	4,992	0.01	92	0.0	$10.96	$32.52	$10.00	2.05
Nurse's Suite	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nurse's Office 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Nurse's Office 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$343.03	$20.00	13.37
Nurse's Suite	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,494	0.04	376	0.0	$44.90	$324.77	$15.00	6.90
Nurse's Suite Storage Closet	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	520	None	No	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	520	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nurse's Suite RR	1	Compact Fluorescent: Screw-In (13W) - 2L	Wall Switch	26	730	None	No	1	Compact Fluorescent: Screw-In (13W) - 2L	Wall Switch	26	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nurse's Suite Student RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	730	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	730	0.02	28	0.0	$3.31	$36.52	$10.00	8.02
Server Room	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.14	1,197	0.0	$142.81	$452.58	$85.00	2.57
IT Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,112	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,478	0.05	203	0.0	$24.17	$189.03	$20.00	6.99
Elevator Equip. Stairwell	2	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	4,992	Relamp	No	2	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.01	103	0.0	$12.33	$34.45	$10.00	1.98
Elevator Machine Room	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	730	None	No	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	730	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Back Entrance Theater Corridor	20	Metal Halide: (1) 100W Lamp	Occupancy Sensor	128	3,494	Fixture Replacement	Yes	20	LED - Fixtures: Ceiling Mount	High/Low Control	30	2,446	1.40	8,600	0.0	$1,026.01	$6,341.59	$200.00	5.99
Back Entrance Theater Corridor	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Theater Corridor	24	Metal Halide: (1) 100W Lamp	Occupancy Sensor	128	3,494	Fixture Replacement	No	24	LED - Fixtures: Ceiling Mount	Occupancy Sensor	30	3,494	1.54	9,452	0.0	$1,127.65	$7,129.91	$240.00	6.11
Theater Corridor	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Theater Corridor	2	Compact Fluorescent: Screw-In (42W) - 2L	Wall Switch	84	4,992	Relamp	No	2	LED Screw-In Lamps: Screw-In (29W) - 2L	Wall Switch	58	4,992	0.03	299	0.0	$35.62	$68.90	$20.00	1.37
Theater Corridor	16	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	16	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.41	3,573	0.0	$426.29	$1,359.36	$0.00	3.19
Theater Corridor	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Theater Corridor	18	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	4,992	Relamp	Yes	18	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.94	8,205	0.0	$978.88	$1,514.54	$360.00	1.18
Theater Corridor	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Theater Corridor	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,992	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.29	2,528	0.0	$301.64	$638.18	$120.00	1.72
Commons 1	29	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	4,992	Relamp	Yes	29	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.37	3,230	0.0	$385.33	$2,517.87	$1,595.00	2.39
Commons 1	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Commons 1	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.07	614	0.0	$73.29	$565.15	$275.00	3.96
Commons 1 Playhouse Entry	10	Compact Fluorescent: Screw-In (42W) - 2L	Wall Switch	84	4,992	Relamp	No	10	LED Screw-In Lamps: Screw-In (29W) - 2L	Wall Switch	58	4,992	0.17	1,493	0.0	$178.08	$344.50	$100.00	1.37
Commons 1 Serving Area	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	17	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.46	4,070	0.0	$485.54	$890.76	$205.00	1.41
Commons 1	18	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	18	LED - Linear Tubes: (2) 2' Lamps	High/Low Control	17	3,494	0.25	2,180	0.0	$260.13	$785.27	$810.00	-0.10
Commons 1	39	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	39	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.99	8,709	0.0	$1,039.09	$3,425.94	$1,365.00	1.98
Commons 1	54	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	54	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	1.48	12,927	0.0	$1,542.30	$2,771.81	$2,430.00	0.22
Commons 1 Display Cab	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	No	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	4,992	0.07	603	0.0	$71.92	$109.55	$30.00	1.11
Commons 1 Serving Area 2	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.33	2,873	0.0	$342.73	$708.18	$155.00	1.61
Front Entrance (Exit 1)	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.05	479	0.0	$57.12	$273.03	$90.00	3.20
Front Entrance (Exit 50)	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.05	479	0.0	$57.12	$273.03	$90.00	3.20
Main Office Entry	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,992	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	4,992	0.01	100	0.0	$11.99	$18.26	$5.00	1.11
Middle Hallway From Library to Playhouse	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Middle Hallway From Library to Playhouse	32	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	32	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.82	7,146	0.0	$852.59	$2,918.72	$0.00	3.42
Middle Hallway From Library to Playhouse	4	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	4	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.10	893	0.0	$106.57	$489.84	$0.00	4.60
Hallway from Playhouse to Theater	39	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	39	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.99	8,709	0.0	$1,039.09	$3,425.94	$0.00	3.30
Hallway from Playhouse to Theater	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Music Hallway	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Music Hallway	13	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	13	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.36	3,112	0.0	$371.29	$674.70	$130.00	1.47
Music Hallway	9	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	9	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.23	2,010	0.0	$239.79	$852.14	$0.00	3.55
Commons 3	16	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	4,992	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.20	1,782	0.0	$212.60	$1,368.48	$880.00	2.30

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Commons 3	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Commons 3 Serving Area 3	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.44	3,830	0.0	$456.98	$854.24	$195.00	1.44
Commons 2+3	6	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	6	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.15	1,340	0.0	$159.86	$634.76	$210.00	2.66
Old Gym Entry from Commons	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.33	2,873	0.0	$342.73	$708.18	$155.00	1.61
Commons 2	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.33	2,873	0.0	$342.73	$638.18	$540.00	0.29
Commons 2	17	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	4,992	Relamp	Yes	17	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.22	1,893	0.0	$225.89	$1,441.51	$935.00	2.24
Commons 2	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Serving Area 2	11	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.30	2,633	0.0	$314.17	$671.67	$145.00	1.68
90 Section Hallway	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.44	3,830	0.0	$456.98	$784.24	$160.00	1.37
100 Section Hallway	64	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	64	LED - Linear Tubes: (2) 2' Lamps	High/Low Control	17	3,494	0.89	7,752	0.0	$924.91	$3,080.96	$640.00	2.64
100 Section Hallway	13	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	13	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Exit 10 Vestibule	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 2' Lamps	High/Low Control	17	3,494	0.03	242	0.0	$28.90	$265.03	$20.00	8.48
Exit 11 Vestibule	4	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	4	LED - Linear Tubes: (2) 2' Lamps	High/Low Control	17	3,494	0.06	485	0.0	$57.81	$330.06	$40.00	5.02
Exit 12 Vestibule	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.27	2,394	0.0	$285.61	$565.15	$100.00	1.63
Exit 12 Vestibule	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
200 Section Hallway	31	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	Yes	31	LED - Linear Tubes: (2) 2' Lamps	High/Low Control	17	3,494	0.43	3,755	0.0	$448.00	$1,407.97	$310.00	2.45
200 Section Hallway	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Exit 13 Stairwell	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,992	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,494	0.10	843	0.0	$100.55	$346.06	$40.00	3.04
Exit 13 Stairwell	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Exit 13 Stairwell	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.11	958	0.0	$114.24	$346.06	$40.00	2.68
Exit 09 Vestibule	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	4,992	0.01	92	0.0	$10.96	$32.52	$10.00	2.05
Exit 09 Vestibule	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	1	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.03	223	0.0	$26.64	$272.46	$0.00	10.23
Pearson Hall	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	17	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.46	4,070	0.0	$485.54	$1,020.76	$170.00	1.75
Pearson Hall	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pearson Hall/Pool Vestibule	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.41	3,591	0.0	$428.42	$747.73	$150.00	1.40

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Pearson Hall/Pool Vestibule	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Gyms Hallway	19	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	19	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.52	4,548	0.0	$542.66	$893.79	$190.00	1.30
Gyms Hallway	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Gyms Hallway	10	Compact Fluorescent: Screw-In (13W) - 1L	Wall Switch	13	4,992	Relamp	No	10	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,992	0.03	230	0.0	$27.40	$172.25	$50.00	4.46
Gyms Hallway Display Cabinet	4	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,992	Relamp	No	4	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	4,992	0.04	367	0.0	$43.83	$130.06	$40.00	2.05
Gyms Hallway	19	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	19	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.48	4,243	0.0	$506.22	$1,576.74	$0.00	3.11
Gyms Hallway Vestibule	1	Metal Halide: (1) 100W Lamp	Wall Switch	128	4,992	Fixture Replacement	No	1	LED - Fixtures: Ceiling Mount	Wall Switch	30	4,992	0.06	563	0.0	$67.12	$297.08	$10.00	4.28
Gyms Hallway Vestibule	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Gyms Hallway Vestibule	1	LED Screw-In Lamps: Screw-In (11W) - 1L	Wall Switch	11	4,992	None	No	1	LED Screw-In Lamps: Screw-In (11W) - 1L	Wall Switch	11	4,992	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Gyms Hallway Vestibule	9	Compact Fluorescent: PL (42W) - 2L	Wall Switch	84	4,992	Relamp	No	9	LED Screw-In Lamps: PL (29W) - 2L	Wall Switch	58	4,992	0.15	1,343	0.0	$160.27	$453.96	$0.00	2.83
500 Section Hallway	8	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	8	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,494	0.20	1,787	0.0	$213.15	$779.68	$0.00	3.66
500 Section Hallway	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Section Hallway	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.33	2,873	0.0	$342.73	$638.18	$120.00	1.51
Exit 38 Vestibule	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	1	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.03	239	0.0	$28.56	$236.52	$10.00	7.93
Vestibule	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	1	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,494	0.03	239	0.0	$28.56	$236.52	$10.00	7.93
Elevator Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,992	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,494	0.05	479	0.0	$57.12	$343.03	$20.00	5.66
Wrestling Room Storage	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	520	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	520	0.13	118	0.0	$14.13	$219.09	$60.00	11.26
Football Field Lighting	44	Metal Halide: (1) 1000W Lamp	Wall Switch	1,080	4,992	Fixture Replacement	No	44	LED - Fixtures: Large Pole/Arm-Mounted Area/Roadway Fixture	Wall Switch	300	4,992	22.50	197,024	0.0	$23,506.37	$52,558.18	$0.00	2.24
Pole Lights	29	High-Pressure Sodium: (1) 150W Lamp	Wall Switch	188	4,992	Fixture Replacement	No	29	LED - Fixtures: Outdoor Pole/Arm-Mounted Decorative Fixture	Wall Switch	45	4,992	2.72	23,807	0.0	$2,840.35	$26,986.36	$1,450.00	8.99
Parking Lot Pole Lights	32	High-Pressure Sodium: (1) 400W Lamp	Wall Switch	465	4,380	Fixture Replacement	No	32	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Wall Switch	120	4,380	7.24	55,608	0.0	$6,634.48	$29,778.05	$3,200.00	4.01
Wall Packs	23	High-Pressure Sodium: (1) 150W Lamp	Wall Switch	188	4,380	Fixture Replacement	No	23	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Wall Switch	45	4,380	2.16	16,567	0.0	$1,976.52	$22,217.21	$2,300.00	10.08
Exit 9 Door Light	4	Mercury Vapor: (1) 100W Lamp	Wall Switch	125	4,380	None	No	4	Mercury Vapor: (1) 100W Lamp	Wall Switch	125	4,380	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Exit 9 Half Dome	22	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,380	None	No	22	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,380	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Field House	3	Compact Fluorescent: Screw-In (18W) - 1L	Wall Switch	18	4,380	Relamp	No	3	LED Screw-In Lamps: Screw-In (9W) - 1L	Wall Switch	9	4,380	0.02	136	0.0	$16.23	$51.68	$15.00	2.26
Exit 11 Door Light	1	Mercury Vapor: (1) 100W Lamp	Wall Switch	125	4,380	None	No	1	Mercury Vapor: (1) 100W Lamp	Wall Switch	125	4,380	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Exit 14 Door Light	4	High-Pressure Sodium: (1) 100W Lamp	Wall Switch	138	4,380	Fixture Replacement	No	4	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Wall Switch	30	4,380	0.28	2,176	0.0	$259.61	$3,863.86	$400.00	13.34
Exit 33 Door Light	3	Compact Fluorescent: PL (42W) - 2L	Wall Switch	84	4,380	Relamp	No	3	LED Screw-In Lamps: PL (29W) - 2L	Wall Switch	58	4,380	0.05	393	0.0	$46.87	$151.32	$0.00	3.23

Motor Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
		Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	HW Heating	1	Heating Hot Water Pump	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	1.33	12,458	0.0	$1,486.31	$5,375.00	$0.00	3.62
Boiler Room	HW Heating	1	Heating Hot Water Pump	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	1.33	12,458	0.0	$1,486.31	$5,375.00	$0.00	3.62
Boiler Room	Chilled Water Pump	1	Chilled Water Pump	15.0	92.4%	No	3,391	Yes	92.4%	Yes	1	1.83	17,864	0.0	$2,131.28	$7,085.87	$0.00	3.32
Boiler Room	Chilled Water Pump	1	Chilled Water Pump	15.0	92.4%	No	3,391	Yes	92.4%	Yes	1	1.83	17,864	0.0	$2,131.28	$7,085.87	$0.00	3.32
Boiler Room	Chilled Water Pump	1	Chilled Water Pump	15.0	92.4%	No	3,391	Yes	92.4%	Yes	1	1.83	17,864	0.0	$2,131.28	$7,085.87	$0.00	3.32
Boiler Room	Zone 1 Dist.	1	Heating Hot Water Pump	50.0	94.5%	Yes	4,067	No	94.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Zone 2 Dist.	1	Heating Hot Water Pump	30.0	92.4%	Yes	4,067	No	92.4%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Zone 3 Dist.	1	Heating Hot Water Pump	15.0	92.4%	Yes	3,391	No	92.4%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Compressed Aur Controls	1	Air Compressor	7.5	91.7%	No	4,957	No	91.7%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Mechanical Room	Pool Circulation Pumps	1	Process Pump	15.0	93.0%	No	4,067	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Mechanical Room	Pool Circulation Pumps	1	Process Pump	15.0	93.0%	No	4,067	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Area	Pool Bubble	1	Supply Fan	5.0	89.5%	Yes	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Elevator Rooms	Elevator Hydrolic Pump	2	Process Pump	30.0	91.7%	No	4,067	No	91.7%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Stage RTU	1	Supply Fan	7.5	91.7%	No	3,391	No	91.7%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Stage RTU	1	Exhaust Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Kitchen	1	Supply Fan	40.0	94.1%	No	4,067	No	94.1%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Kitchen	1	Exhaust Fan	15.0	92.4%	No	3,391	No	92.4%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Music Room	1	Supply Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Music Room	1	Exhaust Fan	2.0	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Vocal Music Room	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Vocal Music Room	1	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Music Office	1	Supply Fan	2.0	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Music Office	1	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Band Room	1	Supply Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Band Room	1	Exhaust Fan	2.0	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Art Room	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Art Room	1	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Art Room	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Art Room	1	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Photo Room	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Photo Room	1	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	N/A	1	Supply Fan	15.0	92.4%	No	3,391	No	92.4%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	N/A	2	Exhaust Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	N/A	1	Supply Fan	1.5	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	N/A	1	Exhaust Fan	0.5	78.2%	No	2,745	No	78.2%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Weight Room RTU	1	Supply Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Weight Room RTU	1	Exhaust Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Gym Corridors RTU	1	Supply Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Gym Corridors RTU	1	Exhaust Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Aux Gym RTU	1	Supply Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Aux Gym RTU	1	Exhaust Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	New Gym RTU	2	Supply Fan	15.0	93.0%	No	3,391	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	New Gym RTU	2	Exhaust Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Elevator Hydrolic Pump	1	Process Pump	15.0	92.5%	No	3,391	No	92.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 19	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 5	1	Supply Fan	2.0	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 6	1	Supply Fan	2.0	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 7	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 8	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 9	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 10	1	Supply Fan	15.0	92.5%	No	3,391	No	92.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 11	1	Supply Fan	1.5	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 12	1	Supply Fan	3.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 2	1	Supply Fan	2.0	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 3	1	Supply Fan	1.5	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	AHU 4	1	Supply Fan	1.5	86.5%	No	2,745	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Electric HVAC Inventory & Recommendations

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Auditorium	1	Packaged AC	75.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Stage	1	Packaged AC	25.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Server Room	1	Ductless Mini-Split AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Office	1	Ductless Mini-Split HP	1.50	16.40	No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Office	2	Ductless Mini-Split HP	0.75	8.00	No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	IDF Room	1	Ductless Mini-Split AC	2.80		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Music Room	1	Packaged AC	18.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Vocal Music Room	1	Packaged AC	10.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Music Office	1	Packaged AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Band Room	1	Packaged AC	13.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Art Room	1	Packaged AC	10.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Office	3	Split-System AC	1.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Office	1	Split-System AC	2.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Art Room	1	Packaged AC	7.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Photo Room	1	Packaged AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	N/A	1	Packaged AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Server Room	2	Split-System AC	0.75		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Library	1	Split-System AC	20.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Library	1	Split-System AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	IDF Room	1	Ductless Mini-Split AC	0.75		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Weight Room	1	Packaged AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Gym Corridors	1	Packaged AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	N/A	4	Ductless Mini-Split AC	0.75		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Science Wing	2	Split-System AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	New Gym	2	Packaged AC	40.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Aux Gym	1	Packaged AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Aux Gym	1	Packaged AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Electric Chiller Inventory & Recommendations

		Existing Conditions			Proposed Conditions							Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Chiller Quantity	System Type	Cooling Capacity per Unit (Tons)	Install High Efficiency Chillers?	Chiller Quantity	System Type	Constant/ Variable Speed	Cooling Capacity (Tons)	Full Load Efficiency (kW/Ton)	IPLV Efficiency (kW/Ton)	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Outdoors	Whole Building	1	Air-Cooled Screw Chiller	236.40	Yes	1	Air-Cooled Screw Chiller	Variable	236.40	1.24	0.73	82.23	206,931	0.0	$24,688.36	$229,039.18	$21,748.80	8.40

Fuel Heating Inventory & Recommendations

		Existing Conditions			Proposed Conditions						Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Output Capacity per Unit (MBh)	Install High Efficiency System?	System Quantity	System Type	Output Capacity per Unit (MBh)	Heating Efficiency	Heating Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Condensing Hot Water Boiler	1,880.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Mechanical Room	Pool	1	Non-Condensing Hot Water Boiler	615.00	Yes	1	Condensing Hot Water Boiler	615.00	91.00%	Et	0.00	0	38.2	$317.67	$14,762.10	$1,353.00	42.21
Roof	New Gym	1	Furnace	765.00	Yes	1	Furnace	765.00	95.00%	AFUE	0.00	0	23.0	$191.59	$17,332.86	$400.00	88.38
Roof	New Gym	1	Furnace	765.00	Yes	1	Furnace	765.00	95.00%	AFUE	0.00	0	23.0	$191.59	$17,332.86	$400.00	88.38

DHW Inventory & Recommendations

		Existing Conditions		Proposed Conditions						Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Replace?	System Quantity	System Type	Fuel Type	System Efficiency	Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	Whole Building	2	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
WH Room	Gym Area	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Consession Room	Ticket Counter/Consessions	1	Storage Tank Water Heater (≤ 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Custodial Closet	Custodial Closet	1	Storage Tank Water Heater (≤ 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Walk-In Cooler/Freezer Inventory & Recommendations

	Existing Conditions		Proposed Conditions			Energy Impact & Financial Analysis						
Location	Cooler/ Freezer Quantity	Case Type/Temperature	Install EC Evaporator Fan Motors?	Install Electric Defrost Control?	Install Evaporator Fan Control?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen Area	1	Medium Temp Freezer (0F to 30F)	No	Yes	No	0.00	53	0.0	$6.36	$518.60	$50.00	73.69
Kitchen Area	1	Cooler (35F to 55F)	No	Yes	No	0.00	53	0.0	$6.36	$518.60	$50.00	73.69

Commercial Refrigerator/Freezer Inventory & Recommendations

	Existing Conditions			Proposed Condi	Energy Impact & Financial Analysis						
Location	Quantity	Refrigerator/ Freezer Type	ENERGY STAR Qualified?	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen Area	3	Refrigerator Chest	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen Area	3	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Cooking Equipment Inventory & Recommendations

	Existing Conditions			Proposed Conditions	Energy Impact & Financial Analysis						
Location	Quantity	Equipment Type	High Efficiency Equipement?	Install High Efficiency Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen Area	3	Insulated Food Holding Cabinet (3/4 Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen Area	1	Electric Steamer	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen Area	3	Gas Rack Oven (Double)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen Area	1	Gas Griddle (4 Feet Width)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen Area	2	Electric Fryer	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Plug Load Inventory

	Existing Conditions			
Location	Quantity	Equipment Description	Energy Rate (W)	ENERGY STAR Qualified?
Whole Building	332	Desktop Computers	150.0	Yes
Whole Building	45	Desk Printers	40.0	Yes
Whole Building	11	Coffee Maker	800.0	No
Whole Building	20	LED TVs	71.0	Yes
Whole Building	9	Photocopiers	600.0	Yes
Whole Building	8	Refirgerator	172.0	No
Whole Building	17	Microwave Oven	800.0	Yes
Whole Building	2	Toaster Oven	900.0	No
Whole Building	2	Laminator	750.0	Yes
Whole Building	8	Water Cooler	500.0	No
Whole Building	1	Water Fountain	153.0	No
Whole Building	66	Projector	200.0	Yes
Whole Building	6	Paper Shredder	150.0	No
Whole Building	10	CRT TV	120.0	No
Whole Building	8	Minifridge	153.0	Yes
Whole Building	3	TV Cameras	357.0	No
Whole Building	1	Ice Machine	127.0	Yes
Whole Building	2	Washer	900.0	Yes
Whole Building	2	Dryer	1,500.0	Yes
Whole Building	5	Stove/Oven	1,150.0	No
Whole Building	1	Dishwasher	750.0	Yes
Whole Building	5	Box Fans	100.0	No

Vending Machine Inventory & Recommendations

	Existing Conditions		Proposed Conditions	Energy Impact & Financial Analysis						
Location	Quantity	Vending Machine Type	Install Controls?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Teacher's Lounge	1	Refrigerated	Yes	0.00	1,612	0.0	$192.30	$230.00	$0.00	1.20
Commons 1	1	Refrigerated	Yes	0.00	1,612	0.0	$192.30	$230.00	$0.00	1.20

Appendix B: ENERGY STAR® Statement of Energy Performance

ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

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ENERGY STAR® Score[1]

High School South

Primary Property Type: K-12 School
Gross Floor Area (ft²): 270,372
Built: 1982

For Year Ending: November 30, 2017
Date Generated: October 12, 2018

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

Property & Contact Information

Property Address	Property Owner	Primary Contact
High School South 346 Clarksville Road, West Windsor, New Jersey 08550	_____ , (___)___-_____	___ _____ , (___)___-_____ _____

Property ID: 6388318

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
96.5 kBtu/ft²

Source EUI
189.4 kBtu/ft²

Annual Energy by Fuel

Electric - Solar (kBtu)	698,130 (3%)
Electric - Grid (kBtu)	13,618,932 (52%)
Natural Gas (kBtu)	11,784,545 (45%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	71.9
National Median Source EUI (kBtu/ft²)	141
% Diff from National Median Source EUI	34%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	2,006

Signature & Stamp of Verifying Professional

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

Signature: _____ Date: _____

Licensed Professional

___ _____
,
(___)___-_____
_____

Professional Engineer Stamp (if applicable)