Local Government Energy Audit:
Energy Audit Report

High School North

90 Grovers Mill Rd.

Plainsboro, New Jersey 08536

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 North.

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 North is a 323,931 square foot two-story building comprised of various space types including classrooms, offices, dining rooms, gymnasiums, locker rooms, a commercial kitchen, a theater, a pool, a media center, and various storage and mechanical spaces.

Lighting at High School North consists mostly of aging and inefficient fluorescent lighting and some incandescent and metal halide lighting fixtures. Heating is supplied by two absorption chillers and a hot water boiler. Cooling is supplied mainly by three absorption chillers providing chilled water to air handler units and unit ventilators. Domestic hot water for the building is supplied by four Laars water heaters located in the boiler room. 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 14 measures and recommends 12 measures which together represent an opportunity for High School North to reduce annual energy costs by roughly $185,248 and annual greenhouse gas emissions by 1,550,150 lbs CO_2e. We estimate that if all measures were implemented as recommended, the project would pay for itself in 2.9 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 North's annual energy use by 16%.

Figure 1 – Previous 12 Month Utility Costs

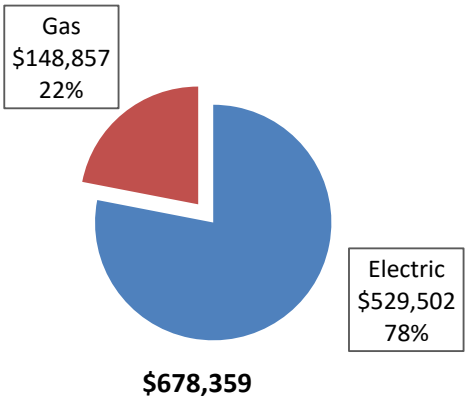
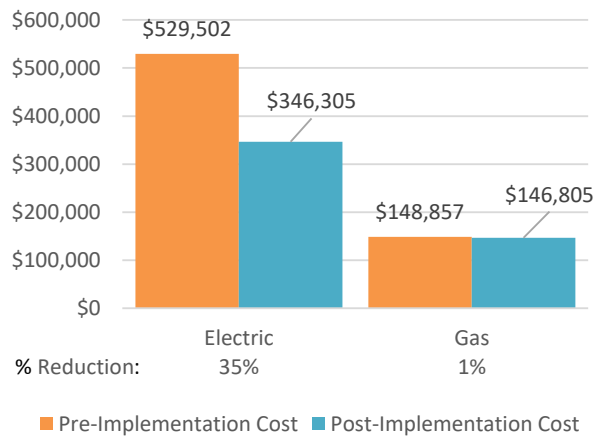


Figure 2 – Potential Post-Implementation Costs



A detailed description of High School North'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			**884,591**	**117.7**	**0.0**	**$107,275.85**	**$344,337.87**	**$41,835.00**	**$302,502.87**	**2.8**	**890,776**
ECM 1	Install LED Fixtures	Yes	176,119	36.2	0.0	$21,358.29	$141,053.81	$10,460.00	$130,593.81	6.1	177,351
ECM 2	Retrofit Fixtures with LED Lamps	Yes	708,472	81.4	0.0	$85,917.56	$203,284.07	$31,375.00	$171,909.07	2.0	713,425
Lighting Control Measures			**188,856**	**21.2**	**0.0**	**$22,902.87**	**$89,860.00**	**$10,255.00**	**$79,605.00**	**3.5**	**190,176**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	160,712	18.4	0.0	$19,489.79	$80,460.00	$10,255.00	$70,205.00	3.6	161,835
ECM 4	Install High/Low Lighitng Controls	Yes	28,144	2.8	0.0	$3,413.08	$9,400.00	$0.00	$9,400.00	2.8	28,341
Motor Upgrades			**3,662**	**0.8**	**0.0**	**$444.07**	**$10,748.40**	**$0.00**	**$10,748.40**	**24.2**	**3,687**
ECM 5	Premium Efficiency Motors	Yes	3,662	0.8	0.0	$444.07	$10,748.40	$0.00	$10,748.40	24.2	3,687
Variable Frequency Drive (VFD) Measures			**420,619**	**86.2**	**0.0**	**$51,009.14**	**$158,861.10**	**$26,600.00**	**$132,261.10**	**2.6**	**423,560**
ECM 6	Install VFDs on Constant Volume (CV) HVAC	Yes	206,358	57.0	0.0	$25,025.36	$91,084.70	$19,400.00	$71,684.70	2.9	207,801
ECM 7	Install VFDs on Chilled Water Pumps	Yes	107,130	14.6	0.0	$12,991.89	$33,888.20	$7,200.00	$26,688.20	2.1	107,880
ECM 8	Install VFDs on Hot Water Pumps	Yes	107,130	14.6	0.0	$12,991.89	$33,888.20	$0.00	$33,888.20	2.6	107,880
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**426.4**	**$3,537.53**	**$80,467.47**	**$0.00**	**$80,467.47**	**22.7**	**49,925**
	Install High Efficiency Hot Water Boilers	No	0	0.0	426.4	$3,537.53	$80,467.47	$0.00	$80,467.47	22.7	49,925
HVAC System Improvements			**2,915**	**0.0**	**158.6**	**$1,669.59**	**$8,156.52**	**$0.00**	**$8,156.52**	**4.9**	**21,510**
ECM 9	Implement Demand Control Ventilation	Yes	2,915	0.0	158.6	$1,669.59	$8,156.52	$0.00	$8,156.52	4.9	21,510
Domestic Water Heating Upgrade			**0**	**0.0**	**88.7**	**$735.80**	**$1,757.97**	**$0.00**	**$1,757.97**	**2.4**	**10,384**
ECM 10	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	88.7	$735.80	$1,757.97	$0.00	$1,757.97	2.4	10,384
Food Service Equipment & Refrigeration Measures			**4,179**	**0.2**	**0.0**	**$506.84**	**$5,901.71**	**$250.00**	**$5,651.71**	**11.2**	**4,209**
	Refrigerator/Freezer Case Electrically Commutated Motors	No	983	0.1	0.0	$119.21	$1,516.50	$0.00	$1,516.50	12.7	990
ECM 11	Refrigeration Controls	Yes	3,196	0.0	0.0	$387.63	$4,385.21	$250.00	$4,135.21	10.7	3,219
Plug Load Equipment Control - Vending Machine			**6,790**	**0.0**	**0.0**	**$823.42**	**$1,150.00**	**$0.00**	**$1,150.00**	**1.4**	**6,837**
ECM 12	Vending Machine Control	Yes	6,790	0.0	0.0	$823.42	$1,150.00	$0.00	$1,150.00	1.4	6,837
TOTALS FOR HIGH PRIORITY MEASURES			**1,510,628**	**225.9**	**247.3**	**$185,248.37**	**$619,257.07**	**$78,940.00**	**$540,317.07**	**2.9**	**1,550,150**
TOTALS FOR ALL EVALUATED MEASURES			**1,511,611**	**226.1**	**673.7**	**$188,905.11**	**$701,241.04**	**$78,940.00**	**$622,301.04**	**3.3**	**1,601,065**

* - 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.

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.

HVAC System Improvements generally involve the installation of automated controls to reduce heating and cooling demand during periods of reduced demand. These measures could encompass changing temperature setpoints, using outside air for free cooling, or limiting excessive outside air during extreme outdoor air temperature conditions. These measures save energy by reducing the demand on HVAC systems and the amount of time systems operate.

Domestic Hot Water upgrade measures generally involve replacing older inefficient domestic water heating systems with modern energy efficient systems. New domestic hot water heating systems can provide equivalent, or greater, water heating capacity compared to older systems at a reduced energy cost. These measures save energy by reducing the fuel used for domestic hot water heating due to improved heating efficiency or reducing standby losses.

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 17 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 North include:

- Reduce Air Leakage
- Close Doors and Windows
- Use Window Treatments/Coverings
- Perform Proper Lighting Maintenance
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Turn Off Unneeded Motors
- Use Fans to Reduce Cooling Load
- Install Destratification Fans
- Ensure Economizers are Functioning Properly
- Assess Chillers & Request Tune-Ups
- Clean Evaporator/Condenser Coils on AC Systems
- Check for and Seal Duct Leakage
- Perform Proper Boiler Maintenance
- Perform Proper 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 North. Based on the configuration of the site and its loads there is a high potential for installing a photovoltaic (PV) array and a CHP system.

Figure 4 – Photovoltaic Potential

Potential	High	
System Potential	726	kW DC STC
Electric Generation	864,935	kWh/yr
Displaced Cost	$75,250	/yr
Installed Cost	$2,831,400	

Figure 5 – Combined Heat and Power Potential

Potential	High	
System Type	Fuel Cell	
System Potential	550	kW
Electric Generation	4,518,424	kWh/yr
Thermal Generation	10,366,276	MBtu/yr
Displaced Cost	$300,357	/yr
Installed Cost	$2,680,000	

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)
- Combined Heat and Power Program
- 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 8.5 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 6 – 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	
TRC Energy Services			
Alexander Klieverik	Auditor	aklieverik@trcsolutions.com	(732) 855-0033

2.2 General Site Information

On June 5, 2018 and June 6, 2018, TRC performed an energy audit at High School North located in Plainsboro, 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 North is a 323,931 square foot two-story building comprised of various space types including classrooms, offices, dining rooms, gymnasiums, locker rooms, a commercial kitchen, a theater, a pool, a media center, and various storage and mechanical spaces.

The building was constructed in 1997. Approximately seven years ago, the facility replaced all of its existing T12 fluorescent fixtures with T8 fluorescent fixtures.

2.3 Building Occupancy

The school building is open for classes Monday through Friday and open on weekends for various sporting and community events. The typical schedule is presented in the table below. The entire building is used year-round by the community and camps are run throughout the summer. During a typical day, the facility is occupied by approximately 235 staff and 1380 students.

Figure 7 - Building Schedule

Building Name	Weekday/Weekend	Operating Schedule
High School North	Weekday	6:00AM to 10:00PM
High School North	Weekend	7:00 AM to 10:00 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 white reflective membrane that is in good condition. The buildings have double pane windows which are in good condition and show little sign of excessive infiltration. The exterior doors are constructed of aluminum and in fair condition except that the door seals have worn out which increases the level of outside air infiltration.

2.5 On-Site Generation

High School North installed a 10-kW solar energy project in 2016. The project included photovoltaic (PV) arrays on the roof of the building. There are approximately 260 PV panels in total. The systems provide 2% 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 32-Watt linear fluorescent T8 lamps with electronic ballasts as well as some compact fluorescent lamps (CFL). Most of the fixtures are 2-lamp or 3-lamp, 4-foot long troffers with diffusers. Anthony, the facility's head electrician, indicated that the building had a comprehensive T8 retrofit seven years ago.



There are some incandescent lighting fixtures located in the media center and theater seating area. The robotics lab and pool area are the only areas of the building currently using LED lighting technologies.

Lighting control in most spaces is provided by wall switches. Occupancy sensors were installed in the robotics lab when the lighting was upgraded with LED lighting technology. Stairwells, corridors, and main lobby areas do not contain any occupancy sensors and are on from when the building opens in the morning to when the maintenance staff leaves the building.

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

Chilled & Hot Water System

The building's heating and cooling is supplied by three McQuay, hybrid natural gas-fired absorption chillers (CH-H1, CH-H2, CH-H3) each with a cooing capacity of 360 tons and a heating capacity of 3360 MMBtus. There is also one H.B. Smith Cast Iron hot water boiler. The chiller units provide either heating water or chilled water for unit ventilators and rooftop units located throughout the building. The system generally operates in heating mode from mid-October through mid-April and in cooling mode the rest of the year. Chiller 3 (CH-H3) is only used for cooling, and the H.B. Smith hot water boiler is used to supplement the heating needs of the building. The chillers are configured in a primary distribution loop with four constant flow return pumps and eight constant flow supply pumps. The absorption chillers operate based on outdoor temperature. Hot water is distributed at 130°F by four supply pumps (P1, P2, P3, P4). Chilled water is distributed at 44°F by four 30 hp supply pumps (P5, P6, P7, P8).

The chiller supplies chilled water to rooftop air handlers RTU1 through RTU15, as well as RTU CI and RTU DI. The building maintenance staff manually stage chillers to meet the load, operating the least number of chillers required.

The absorption chillers are original to the building but have been well maintained.

The condenser water system consists of three, one-cell cooling towers (CT1-CT3). Water is circulated between each tower and absorption chiller, allowing for a single tower and chiller to operate. Each tower has one fan motor and one pump; one fan motor at 7.5 hp and one pump motor at 20 hp.

It was observed that the towers had many leaks.

There is also a 47ft. X 84ft. 190,000-gallon pool at the building. The pool is heated in the winter by the central heating plant, sending hot water to a water to water heat exchanger located in a small mechanical room near the pool. During the summer, there is rooftop Desert Aire air to water heat exchanger used to take advantage of free heat from outdoors. There are two 15 hp circulation pumps located in the mechanical room to circulate pool water from the heat exchanger. The pumps are in operation 24 hours a day, seven days a week.

Heating and Cooling Distribution System

The building heating and cooling system supplies hot and chilled water to unit ventilators and rooftop units throughout the building. Unit ventilators supply conditioned air to classrooms, offices, and various storage rooms. There are 16 rooftop air handling units (RTU2-15 and RTU-CI and RTU-DI) that serve the large spaces of the building. Each RTU draws air from its own return air shaft and supplies air to its own air shaft.

The RTUs are constant air volume (CAV) units that have hot water and chilled water coils with outside air economizers to utilize free cooling when the outside air temperature is lower than the return air temperature. RTU-2, RTU-4-1, RTU-7, RTU-8, RTU-13, RTU-14, and RTU-DI have one 10 hp supply fan and one 3 hp return fan. They serve the media center, main office, lower dining hall, kitchen, main gym, and auxiliary gym, respectively. RTU-3, RTU-15, and RTU-CI have one 15 hp supply fan and one 5 hp return fan. Those units serve rooms 115, 117, 119 and the housekeeping break room. RTU-4 serves the theater seating area and has one 40 hp supply fan and one 30 hp return fan. RTU-5 serves the theater stage area and has one 7.5 hp supply fan and one 5 hp return fan. RTU-9 serves the men's team room and has only one 3 hp supply fan. RTU-10 serves the pool locker rooms and has only one 7.5 hp supply fan. RTU-11 serves the athletic office and training room and has a 7.5 hp supply fan and a 1 hp return fan.

Typically, supply air temperature is reset based on return air (average zone air) temperature. Air is supplied at 65°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.

Direct Expansion Air Conditioning System (DX)

There are three IDF (Intermediate Distribution Frame) rooms served by mini-split heat pumps. Two of the units are cooling only units, with a capacity of 1.8 tons and 4 tons. One of the units is a heating and cooling unit with a cooling capacity of 1.5 tons and a heating capacity of 1.83 kBtuh. The units are controlled by individual thermostats located in space. The heat pumps are connected to the building energy management system (EMS) and operate based on building occupancy to maintain the zone space temperature setpoint around 72°F (adjustable by staff).


A 1.2-ton Carrier cooling only split system is used to condition the kitchen office. The compressor and condensing unit are located on the roof above the space. The unit is manually controlled by a thermostat located in space. The unit operates on demand to maintain a space temperature setpoint around 74°F (adjustable by staff).

A 12.5 -ton Carrier cooling only split system is used to condition offices near the theater. The compressor and condensing unit are located on the roof above the space. The unit is manually controlled by thermostats located in zone. The unit operates on demand to maintain a space temperature setpoint around 74°F (adjustable by staff).



A 16-ton McQuay cooling only split system is used to condition offices in the 100-wing on the first floor. The compressor and condensing unit are located on the roof above the space. The unit is manually controlled by thermostats located in zone. The unit operates on demand to maintain a space temperature setpoint around 74°F (adjustable by staff).

Domestic Hot Water Heating System

The domestic hot water heating system for the facility consists of four Laars gas-fired ultra-high efficiency condensing hot water heaters with an input rating of 399 kBtu/hr each and a thermal efficiency of 93%. Each water heater has a 100-gallon storage capacity. Two 1/6 hp pumps, and two 1/12 hp recirculation pumps distribute 120°F water to the entire building including the kitchen. The recirculation pumps operate based on an aquastat on the return line set at 120°F.

Food Service Equipment

The facility has a full commercial kitchen that is used to prepare breakfast and lunch for the students. The ovens, range tops and griddle are all gas fired. There is a 30-gallon kettle that are used every day to prepare hot soup. The ovens and griddle are turned on at 6:30 AM when the kitchen staff arrive and turned off at 1:30 PM when lunch service stops. There is a conveyor 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 35°F and freezer area is maintained at a constant 1°F. Cooler area is served by two evaporators and freezer area is served by three evaporators each having a single 1/20 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 580 computer work stations and 1,300 Chromebook laptops with charging carts throughout the building. Roughly 90% of the computer work stations are desktop units with LCD monitors. There is no centralized PC power management software installed.

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

The building has four refrigerated beverage vending machines, and one non-refrigerated snack vending machine. There were no controls installed on any vending machines.

2.7 Water-Using Systems

There are 45 restrooms at this facility. A sampling of restrooms found that 21 of the faucets are rated for 2.2 gallons per minute (gpm) or higher, the toilets are rated at 2 gallons per flush (gpf) and the urinals are rated at 1.7 gpf.

The school has a girl's and a boy's locker rooms for the pool and the gymnasium. Each locker room has six showerheads rated at 2.5 gpm. The showers in the locker rooms are only used during the school year for after school sports teams.

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

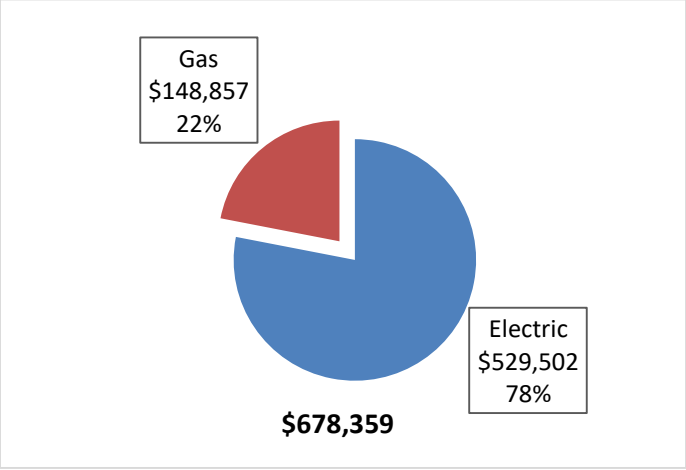
The following energy consumption and cost data is based on the last 12-month period of utility billing data that was provided for each utility. A profile of the annual energy consumption and energy cost of the facility was developed from this information.

Figure 8 - Utility Summary

Utility Summary for High School North		
Fuel	**Usage**	**Cost**
Electricity	4,366,244 kWh	$529,502
Natural Gas	179,424 Therms	$148,857
Total		**$678,359**

The current annual energy cost for this facility is $678,359 as shown in the chart below.

Figure 9 - Energy Cost Breakdown



3.2 Electricity Usage

Electricity is provided by PSE&G. The average electric cost over the past 12 months was $0.121/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. Because natural gas is used for both heating and the bulk of the cooling, electricity use does not vary much based on seasonality.

Figure 10 - Electric Usage & Demand

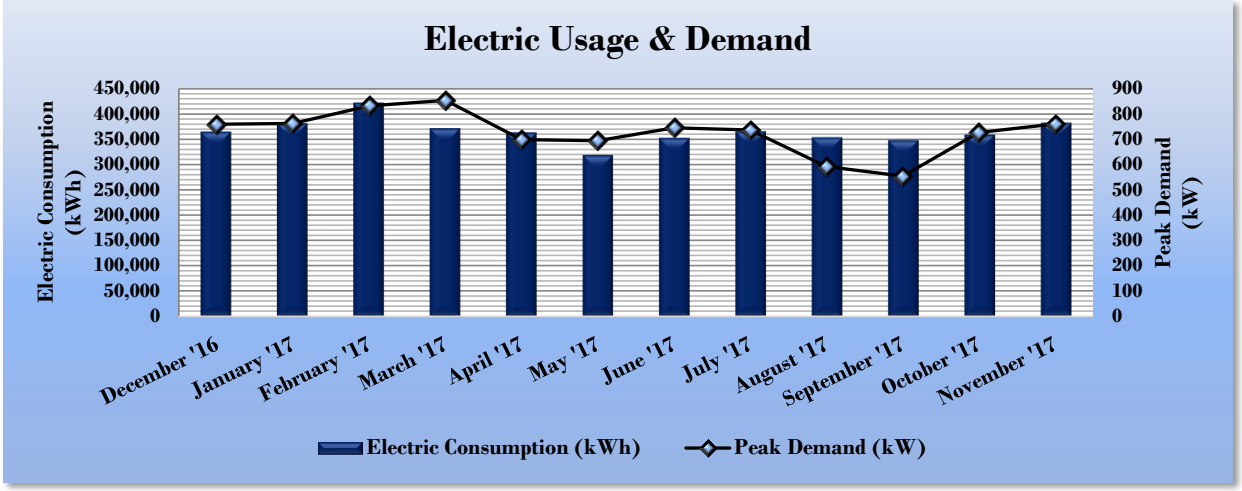


Figure 11 - Electric Usage & Demand

Electric Billing Data for High School North					
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Demand Cost	Total Electric Cost
12/28/16	30	364,418	760	$2,830	$41,377
1/27/17	30	380,761	763	$2,841	$43,687
2/24/17	28	421,784	832	$3,096	$48,303
3/28/17	32	370,887	854	$3,175	$42,972
4/27/17	30	363,058	699	$2,632	$41,621
5/26/17	29	318,217	694	$2,615	$37,551
6/28/17	33	352,031	746	$2,809	$41,359
7/27/17	29	365,283	737	$2,775	$49,363
8/29/17	33	353,395	593	$2,232	$46,238
9/27/17	29	347,890	554	$2,088	$45,153
10/27/17	30	358,641	727	$2,781	$48,693
11/29/17	33	381,841	760	$2,910	$44,636
Totals	**366**	**4,378,206**	**853.6**	**$32,785**	**$530,952**
Annual	**365**	**4,366,244**	**853.6**	**$32,696**	**$529,502**

3.3 Natural Gas Usage

Natural gas is provided by PSE&G. The average gas cost for the past 12 months is $0.830/therm, which is the blended rate used throughout the analyses in this report. The monthly gas consumption is shown in the chart below.

Figure 12 - Natural Gas Usage

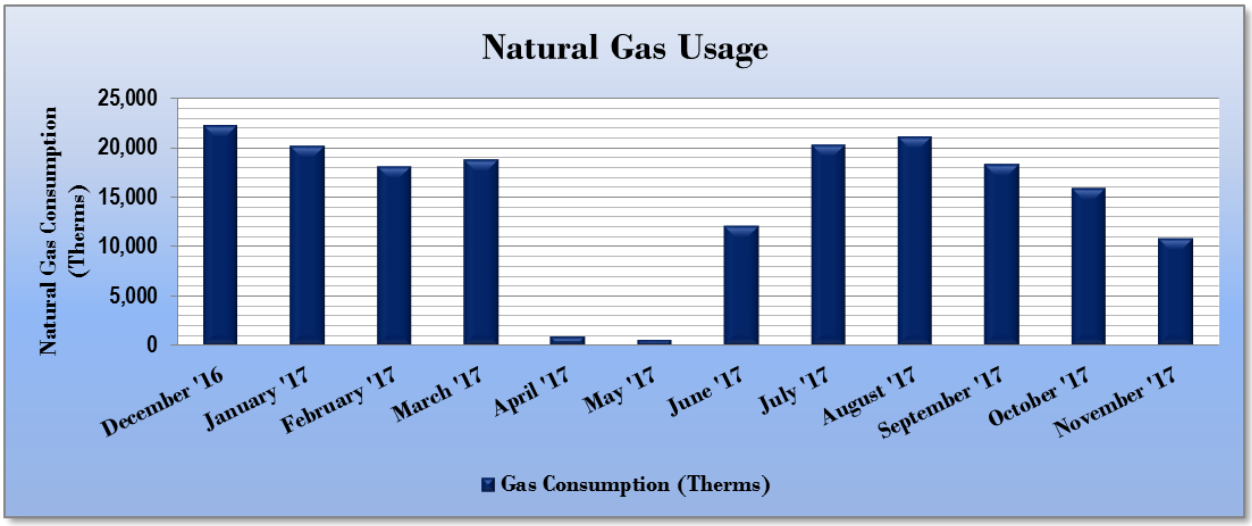


Figure 13 - Natural Gas Usage

Gas Billing Data for High School North				
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost	TRC Estimated Usage?
12/16/16	30	22,156	$16,764	No
1/18/17	33	20,097	$15,980	Yes
2/16/17	29	18,037	$15,244	No
3/20/17	32	18,750	$15,689	No
4/27/17	38	942	$5,789	No
5/18/17	21	542	$3,654	No
6/19/17	32	12,126	$7,654	No
7/19/17	30	20,235	$12,930	No
8/17/17	29	21,057	$13,469	No
9/17/17	31	18,312	$16,793	No
10/17/17	30	15,919	$14,598	No
11/15/17	29	10,760	$9,885	No
Totals	**364**	**178,933**	**$148,449**	
Annual	**365**	**179,424**	**$148,857**	

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 14 - Energy Use Intensity Comparison – Existing Conditions

Energy Use Intensity Comparison - Existing Conditions		
	High School North	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft^2)	202.6	141.4
Site Energy Use Intensity (kBtu/ft^2)	101.4	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 15 - Energy Use Intensity Comparison – Following Installation of Recommended Measures

Energy Use Intensity Comparison - Following Installation of Recommended Measures		
	High School North	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft^2)	151.8	141.4
Site Energy Use Intensity (kBtu/ft^2)	84.7	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 one of the building categories that are eligible to receive a score. This facility has a current score of 19.

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

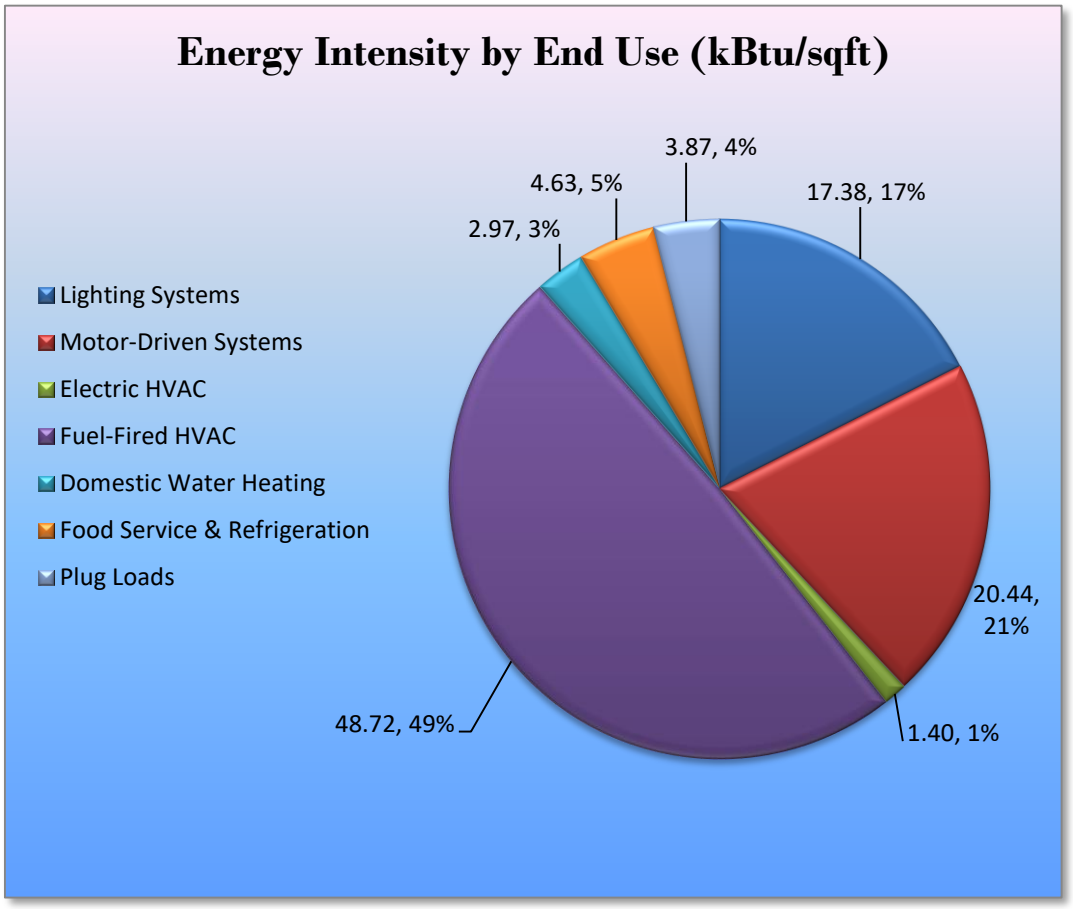
For more information on ENERGY STAR® certification go to: https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1.

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 16 - Energy Balance (% and kBtu/SF)



4 ENERGY CONSERVATION MEASURES

Level of Analysis

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 North 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 17 – 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		**884,591**	**117.7**	**0.0**	**$107,275.85**	**$344,337.87**	**$41,835.00**	**$302,502.87**	**2.8**	**890,776**
ECM 1	Install LED Fixtures	176,119	36.2	0.0	$21,358.29	$141,053.81	$10,460.00	$130,593.81	6.1	177,351
ECM 2	Retrofit Fixtures with LED Lamps	708,472	81.4	0.0	$85,917.56	$203,284.07	$31,375.00	$171,909.07	2.0	713,425
Lighting Control Measures		**188,856**	**21.2**	**0.0**	**$22,902.87**	**$89,860.00**	**$10,255.00**	**$79,605.00**	**3.5**	**190,176**
ECM 3	Install Occupancy Sensor Lighting Controls	160,712	18.4	0.0	$19,489.79	$80,460.00	$10,255.00	$70,205.00	3.6	161,835
ECM 4	Install High/Low Lighitng Controls	28,144	2.8	0.0	$3,413.08	$9,400.00	$0.00	$9,400.00	2.8	28,341
Motor Upgrades		**3,662**	**0.8**	**0.0**	**$444.07**	**$10,748.40**	**$0.00**	**$10,748.40**	**24.2**	**3,687**
ECM 5	Premium Efficiency Motors	3,662	0.8	0.0	$444.07	$10,748.40	$0.00	$10,748.40	24.2	3,687
Variable Frequency Drive (VFD) Measures		**420,619**	**86.2**	**0.0**	**$51,009.14**	**$158,861.10**	**$26,600.00**	**$132,261.10**	**2.6**	**423,560**
ECM 6	Install VFDs on Constant Volume (CV) HVAC	206,358	57.0	0.0	$25,025.36	$91,084.70	$19,400.00	$71,684.70	2.9	207,801
ECM 7	Install VFDs on Chilled Water Pumps	107,130	14.6	0.0	$12,991.89	$33,888.20	$7,200.00	$26,688.20	2.1	107,880
ECM 8	Install VFDs on Hot Water Pumps	107,130	14.6	0.0	$12,991.89	$33,888.20	$0.00	$33,888.20	2.6	107,880
HVAC System Improvements		**2,915**	**0.0**	**158.6**	**$1,669.59**	**$8,156.52**	**$0.00**	**$8,156.52**	**4.9**	**21,510**
ECM 9	Implement Demand Control Ventilation	2,915	0.0	158.6	$1,669.59	$8,156.52	$0.00	$8,156.52	4.9	21,510
Domestic Water Heating Upgrade		**0**	**0.0**	**88.7**	**$735.80**	**$1,757.97**	**$0.00**	**$1,757.97**	**2.4**	**10,384**
ECM 10	Install Low-Flow Domestic Hot Water Devices	0	0.0	88.7	$735.80	$1,757.97	$0.00	$1,757.97	2.4	10,384
Food Service Equipment & Refrigeration Measures		**3,196**	**0.0**	**0.0**	**$387.63**	**$4,385.21**	**$250.00**	**$4,135.21**	**10.7**	**3,219**
ECM 11	Refrigeration Controls	3,196	0.0	0.0	$387.63	$4,385.21	$250.00	$4,135.21	10.7	3,219
Plug Load Equipment Control - Vending Machine		**6,790**	**0.0**	**0.0**	**$823.42**	**$1,150.00**	**$0.00**	**$1,150.00**	**1.4**	**6,837**
ECM 12	Vending Machine Control	6,790	0.0	0.0	$823.42	$1,150.00	$0.00	$1,150.00	1.4	6,837
TOTALS		**1,510,628**	**225.9**	**247.3**	**$185,248.37**	**$619,257.07**	**$78,940.00**	**$540,317.07**	**2.9**	**1,550,150**

* - 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

Our recommendations for upgrades to existing lighting fixtures are summarized in Figure 18 below.

Figure 18 – 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		**884,591**	**117.7**	**0.0**	**$107,275.85**	**$344,337.87**	**$41,835.00**	**$302,502.87**	**2.8**	**890,776**
ECM 1	Install LED Fixtures	176,119	36.2	0.0	$21,358.29	$141,053.81	$10,460.00	$130,593.81	6.1	177,351
ECM 2	Retrofit Fixtures with LED Lamps	708,472	81.4	0.0	$85,917.56	$203,284.07	$31,375.00	$171,909.07	2.0	713,425

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	29,301	2.9	0.0	$3,553.41	$10,397.78	$350.00	$10,047.78	2.8	29,506
Exterior	146,818	33.3	0.0	$17,804.87	$130,656.02	$10,110.00	$120,546.02	6.8	147,845

Measure Description

We recommend replacing existing fixtures containing metal halide and high-pressure sodium 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.

Recommended locations include interior areas, including the theater and media center, and a significant portion of the building, parking, and campus exterior lighting.

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

ECM 2: 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	708,472	81.4	0.0	$85,917.56	$203,284.07	$31,375.00	$171,909.07	2.0	713,425
Exterior	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.0	0

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 19 below.

Figure 19 – 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		**188,856**	**21.2**	**0.0**	**$22,902.87**	**$89,860.00**	**$10,255.00**	**$79,605.00**	**3.5**	**190,176**
ECM 3	Install Occupancy Sensor Lighting Controls	160,712	18.4	0.0	$19,489.79	$80,460.00	$10,255.00	$70,205.00	3.6	161,835
ECM 4	Install High/Low Lighitng Controls	28,144	2.8	0.0	$3,413.08	$9,400.00	$0.00	$9,400.00	2.8	28,341

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 3: 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)
160,712	18.4	0.0	$19,489.79	$80,460.00	$10,255.00	$70,205.00	3.6	161,835

Measure Description

We recommend installing occupancy sensors to control lighting fixtures that are currently controlled by manual switches in restrooms, storage rooms, classrooms, 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 4: 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)
28,144	2.8	0.0	$3,413.08	$9,400.00	$0.00	$9,400.00	2.8	28,341

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. Areas for such lighting control at this building is of interior corridors.

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 20 below.

Figure 20 - 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		**3,662**	**0.8**	**0.0**	**$444.07**	**$10,748.40**	**$0.00**	**$10,748.40**	**24.2**	**3,687**
ECM 5	Premium Efficiency Motors	3,662	0.8	0.0	$444.07	$10,748.40	$0.00	$10,748.40	24.2	3,687

ECM 5: 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)
3,662	0.8	0.0	$444.07	$10,748.40	$0.00	$10,748.40	24.2	3,687

Measure Description

We recommend replacing standard efficiency motors with NEMA Premium® efficiency motors. Due to the financial impact of this measure, motor replacement should not be considered for locations where variable frequency drives are not going to be installed. 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. We recommend the existing motor specifications be reviewed as part of project planning for any VFD project in that it is possible that some of the existing motors are inverter duty rated. 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.

Recommended motor replacement upgrades include those motors serving a number of the rooftop RTU units supply fans.

4.1.4 Variable Frequency Drive Measures

Our recommendations for variable frequency drive (VFD) measures are summarized in Figure 21 below.

Figure 21 – 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		**420,619**	**86.2**	**0.0**	**$51,009.14**	**$158,861.10**	**$26,600.00**	**$132,261.10**	**2.6**	**423,560**
ECM 6	Install VFDs on Constant Volume (CV) HVAC	206,358	57.0	0.0	$25,025.36	$91,084.70	$19,400.00	$71,684.70	2.9	207,801
ECM 7	Install VFDs on Chilled Water Pumps	107,130	14.6	0.0	$12,991.89	$33,888.20	$7,200.00	$26,688.20	2.1	107,880
ECM 8	Install VFDs on Hot Water Pumps	107,130	14.6	0.0	$12,991.89	$33,888.20	$0.00	$33,888.20	2.6	107,880

ECM 6: Install VFDs on Constant Volume (CV) HVAC

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)
206,358	57.0	0.0	$25,025.36	$91,084.70	$19,400.00	$71,684.70	2.9	207,801

Measure Description

We recommend installing variable frequency drives (VFDs) to control supply fan motor speeds to convert constant-volume, single-zone air handling systems into variable-air-volume (VAV) systems. A separate VFD is usually required to control the return fan motor or dedicated exhaust fan motor, if the air handler has one. Zone thermostats will cause the VFD to modulate fan speed to maintain the appropriate temperature in the zone, while maintaining a constant supply air temperature. Energy savings results from reducing fan speed (and power) when there is a reduced load required for the zone. The magnitude of energy savings is based on the estimated amount of time that fan motors operate at partial load.

VAV systems should not be controlled such that the supply air temperature is raised at the expense of the fan power. A common mistake is to reset the supply air temperature to achieve chiller energy savings, which can lead to additional air flow requirements. Supply air temperature should be kept low, e.g. 55°F, until the minimum fan speed (typically about 50%) is met. At this point, it is efficient to raise the supply air temperature as the load decreases, but not such that additional air flow and thus fan energy is required.

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)
107,130	14.6	0.0	$12,991.89	$33,888.20	$7,200.00	$26,688.20	2.1	107,880

Measure Description

We recommend installing a variable frequency drives (VFD) to control chilled water 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)
107,130	14.6	0.0	$12,991.89	$33,888.20	$0.00	$33,888.20	2.6	107,880

Measure Description

We recommend installing variable frequency drives (VFD) to control hot water 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 HVAC System Upgrades

Our recommendations for HVAC system improvements are summarized in Figure 22 below.

Figure 22 - Summary of HVAC System Improvement 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)
HVAC System Improvements		**2,915**	**0.0**	**158.6**	**$1,669.59**	**$8,156.52**	**$0.00**	**$8,156.52**	**4.9**	**21,510**
ECM 9	Implement Demand Control Ventilation	2,915	0.0	158.6	$1,669.59	$8,156.52	$0.00	$8,156.52	4.9	21,510

ECM 9: Implement Demand Control Ventilation (DCV)

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)
2,915	0.0	158.6	$1,669.59	$8,156.52	$0.00	$8,156.52	4.9	21,510

Measure Description

Demand control ventilation (DCV) monitors indoor air CO_2 content to measure room occupancy. This data is used to regulate the amount of outdoor provided to the space for ventilation. In order to ensure adequate air quality, standard ventilation systems often provide outside air based on a space's estimated maximum occupancy. However, during low occupancy periods, the space may be over ventilated. This wastes energy through excessive fan more usage and additional cost to heat and cool the excessive air flow. DCV reduces unnecessary outdoor air intake by regulating ventilation based on actual occupancy levels, saving significant amounts of energy. DCV is most suited for facilities or areas where occupancy levels vary significantly hour to hour and day to day. Some areas where DCV could be considered at this facility include the media center, dining area, kitchen, wrestling room, and auxiliary gym.

Energy savings associated with DCV are based on hours of operation, space occupancy, system air flow, outside air reduction, and other factors. Energy savings results from eliminating unnecessary ventilation and space conditioning

4.1.6 Domestic Hot Water Heating System Upgrades

Our recommendations for domestic water heating system improvements are summarized in Figure 23 below.

Figure 23 - Summary of Domestic Water Heating 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)
Domestic Water Heating Upgrade		**0**	**0.0**	**88.7**	**$735.80**	**$1,757.97**	**$0.00**	**$1,757.97**	**2.4**	**10,384**
ECM 10	Install Low-Flow Domestic Hot Water Devices	0	0.0	88.7	$735.80	$1,757.97	$0.00	$1,757.97	2.4	10,384

ECM 10: Install Low-Flow DHW Devices

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	88.7	$735.80	$1,757.97	$0.00	$1,757.97	2.4	10,384

Measure Description

We recommend installing low-flow domestic hot water devices to reduce overall hot water demand. Energy demand from domestic hot water heating systems can be reduced by reducing water usage in general. Faucet aerators and low-flow showerheads can reduce hot water usage, relative to standard showerheads and aerators, which saves energy.

Low-flow devices reduce the overall water flow from the fixture, while still adequate pressure for washing. This reduces the amount of water used per day resulting in energy and water savings.

4.1.7 Food Service Equipment & Refrigeration Measures

Our recommendations for food service and refrigeration measures recommendations are summarized in Figure 24 below.

Figure 24 - Summary of Food Service Equipment & Refrigeration 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)
Food Service Equipment & Refrigeration Measures		**3,196**	**0.0**	**0.0**	**$387.63**	**$4,385.21**	**$250.00**	**$4,135.21**	**10.7**	**3,219**
ECM 11	Refrigeration Controls	3,196	0.0	0.0	$387.63	$4,385.21	$250.00	$4,135.21	10.7	3,219

ECM 11: Walk-In Cooler/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)
3,196	0.0	0.0	$387.63	$4,385.21	$250.00	$4,135.21	10.7	3,219

Measure Description

We recommend 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.

Many walk-in coolers and freezers have evaporator fans which run continuously. The measure adds a control system feature to automatically shut off evaporator fans when the cooler's thermostat is not calling for cooling.

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.

4.1.8 Plug Load Equipment Control - Vending Machines

Our recommendations for plug load equipment control measures are summarized in Figure 25 below.

Figure 25 - Summary of Plug Load Equipment 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)
Plug Load Equipment Control - Vending Machine		**6,790**	**0.0**	**0.0**	**$823.42**	**$1,150.00**	**$0.00**	**$1,150.00**	**1.4**	**6,837**
ECM 12	Vending Machine Control	6,790	0.0	0.0	$823.42	$1,150.00	$0.00	$1,150.00	1.4	6,837

ECM 12: 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)
6,790	0.0	0.0	$823.42	$1,150.00	$0.00	$1,150.00	1.4	6,837

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 26 – 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**	**426.4**	**$3,537.53**	**$80,467.47**	**$0.00**	**$80,467.47**	**22.7**	**49,925**
Install High Efficiency Hot Water Boilers	0	0.0	426.4	$3,537.53	$80,467.47	$0.00	$80,467.47	22.7	49,925
Food Service Equipment & Refrigeration Measures	**983**	**0.1**	**0.0**	**$119.21**	**$1,516.50**	**$0.00**	**$1,516.50**	**12.7**	**990**
Refrigerator/Freezer Case Electrically Commutated Motors	983	0.1	0.0	$119.21	$1,516.50	$0.00	$1,516.50	12.7	990
TOTALS	**983**	**0.1**	**426.4**	**$3,656.74**	**$81,983.97**	**$0.00**	**$81,983.97**	**22.4**	**50,915**

* - 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	426.4	$3,537.53	$80,467.47	$0.00	$80,467.47	22.7	49,925

Measure Description

We evaluated replacing the 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. As a result condensing hydronic boilers are not recommended for this site.

Reasons for not Recommending

Due to the long payback period, we do not recommend installing high efficiency boiler at this time.

Refrigerator/Freezer Case Electrically Commutated 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)
983	0.1	0.0	$119.21	$1,516.50	$0.00	$1,516.50	12.7	990

Measure Description

We evaluated replacing shaded pole or permanent split capacitor (PSC) motors with electronically commutated (EC) motors in existing walk-in coolers and freezers. These fractional horsepower EC motors are significantly more efficient than mechanically commutated, brushed motors, particularly at low speeds or partial load. By employing variable-speed technology, EC motors are able to optimize fan usage. Because these motors are brushless and utilize DC power, losses due to friction and phase shifting are eliminated. Savings for this measure take into account both the increased efficiency of the motor as well as the reduction in refrigeration load due to motor heat loss.

Reasons for not Recommending

Due to the long payback period, we do not recommend installing EC motors in the walk-in coolers and freezers at this time.

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 Proper 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.

Turn Off Unneeded Motors

Electric motors often run unnecessarily, and this is an overlooked opportunity to save energy. These motors should be identified and turned off when appropriate. For example, exhaust fans often run unnecessarily when ventilation requirements are already met. Reducing run hours for these motors can result in significant energy savings. Whenever possible, use automatic devices such as twist timers or occupancy sensors to ensure that motors are turned off when not needed.

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.

Install Destratification Fans

Allowing air to thermally stratify in spaces with high ceilings results in additional energy consumption by requiring the heating system to heat a volume of space much larger than the actual occupied space. Additional inefficiencies also occur because there are higher temperatures at the ceiling level than at the floor level. Higher temperatures at the ceiling accelerate heat loss through the roof, requiring additional energy consumption by the heating equipment in order to compensate for the accelerated heat transfer.

Destratification fans are specially designed to deliver a columnar, laminar flow of air balancing the air temperature from floor to ceiling. In addition to fuel savings, the use of destratification fans will reduce the recovery time necessary to warm the space after nightly temperature setbacks and will increase the comfort level of the occupants.

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.

Assess Chillers & Request Tune-Ups

Chillers are responsible for a substantial portion of a commercial building's overall energy usage. When components of a chiller are not optimized, this can quickly result in a noticeable increase in energy bills. Chiller diagnostics can produce a 5% to 10% cost avoidance potential from discovery and implementation of low/no cost optimization strategies.

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.

Check for and Seal Duct Leakage

Duct leakage in commercial buildings typically accounts for 5% to 25% of the supply airflow. In the case of rooftop air handlers, duct leakage can occur to the outside of the building, significantly increasing cooling and heating costs. By sealing sources of leakage, cooling, heating, and ventilation energy use can be reduced significantly, depending on the severity of air leakage.

Perform Proper 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 Proper 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 "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).

Refer to Section 4.1.6 for any low-flow ECM recommendations.

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.

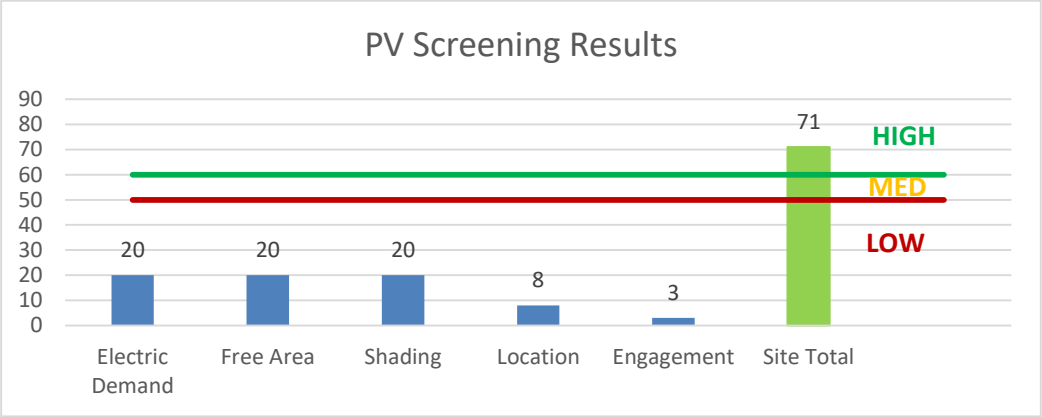
6.1 Photovoltaic

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 **high** potential for installing a PV array.

The amount of free area, ease of installation (location), and the lack of shading elements contribute to the **high** potential for 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 North is interested in pursuing the installation of PV, we recommended a full feasibility study be conducted.

Figure 27 - Photovoltaic Screening



Potential	High	
System Potential	726	kW DC STC
Electric Generation	864,935	kWh/yr
Displaced Cost	$75,250	/yr
Installed Cost	$2,831,400	

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 8.4 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.

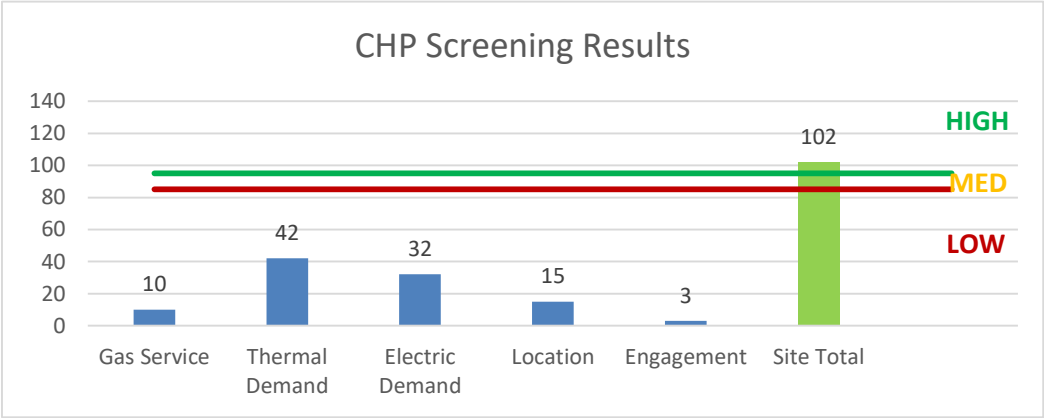
CHP systems are typically used to produce a portion of the electric power used onsite by a facility, with the balance of electric power needs supplied by grid purchases. The heat is used to supplement (or supplant) existing boilers for the purpose of space heating and/or domestic hot water heating. Waste 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 **high** potential for installing a cost-effective CHP system.

The magnitude, type, and duration of the thermal demand, the coincident electric load, and the ease of interconnection contribute to the potential for CHP at the site. Based on the amount of hot water used throughout the year and the concurrent electric demand a gas turbine/reciprocating engine/microturbine/fuel cell may be feasible. If High School North is interested in pursuing the installation of CHP, we recommended a more detailed feasibility study be conducted.

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 28 - Combined Heat and Power Screening



Potential	High	
System Type	Fuel Cell	
System Potential	550	kW
Electric Generation	4,518,424	kWh/yr
Thermal Generation	10,366,276	MBtu/yr
Displaced Cost	$300,357	/yr
Installed Cost	$2,680,000	

Please see Section 8.3 for additional information in the Combined Heat & Power Program.

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 our opinion that this building is not a good fit for 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 29 for a list of the eligible programs identified for each recommended ECM.

Figure 29 - ECM Incentive Program Eligibility

Energy Conservation Measure		SmartStart Prescriptive	SmartStart Custom	Direct Install	Pay For Performance Existing Buildings	Large Energy Users Program
ECM 1	Install LED Fixtures	X			X	
ECM 2	Retrofit Fixtures with LED Lamps	X			X	
ECM 3	Install Occupancy Sensor Lighting Controls	X			X	
ECM 4	Install High/Low Lighitng Controls				X	
ECM 5	Premium Efficiency Motors				X	
ECM 6	Install VFDs on Constant Volume (CV) HVAC	X			X	
ECM 7	Install VFDs on Chilled Water Pumps	X			X	
ECM 8	Install VFDs on Hot Water Pumps				X	
ECM 9	Implement Demand Control Ventilation				X	
ECM 10	Install Low-Flow Domestic Hot Water Devices				X	
ECM 11	Refrigeration Controls				X	
ECM 12	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 Combined Heat and Power

Overview

One of the goals of the State of New Jersey is to enhance energy efficiency through on-site power generation with recovery and productive use of waste heat, and to reduce existing and new demands to the electric power grid. The Combined Heat & Power (CHP) program provides incentives for eligible CHP or Waste Heat to Power (WHP) projects. Eligible CHP or Waste Heat to Power (WHP) projects must achieve an annual system efficiency of at least 65% (Lower Heating Value - LHV), based on total energy input and total utilized energy output. Mechanical energy may be included in the efficiency evaluation.

Incentives

Eligible Technologies	Size (Installed Rated Capacity)	Incentive ($/kW)	% of Total Cost Cap per Project[3]	$ Cap per Project[3]
Powered by non-renewable or renewable fuel source[4]	≤500 kW	$2,000	30-40%[2]	$2 million
Gas Internal Combustion Engine	>500 kW - 1 MW	$1,000		
Gas Combustion Turbine	> 1 MW - 3 MW	$550	30%	$3 million
Microturbine Fuel Cells with Heat Recovery	>3 MW	$350		
Waste Heat to Power*	<1 MW	$1,000	30%	$2 million
	> 1MW	$500		$3 million

*Waste Heat to Power: Powered by non-renewable fuel source, heat recovery or other mechanical recovery from existing equipment utilizing new electric generation equipment (e.g. steam turbine).

Check the NJCEP website for details on program availability, incentive levels, and requirements.

How to Participate

You work with a qualified developer or consulting firm to complete the CHP Application. Once the application is approved the project can be installed. Information about the CHP program can be found at: www.njcleanenergy.com/CHP.

8.4 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.

8.5 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 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 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	4,160	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,912	0.43	3,122	0.0	$378.67	$1,197.27	$250.00	2.50
Boiler 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
Maintenance Main Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.16	1,197	0.0	$145.16	$489.09	$95.00	2.71
Maintenance Break Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.25	1,795	0.0	$217.74	$598.64	$125.00	2.18
Maintenance Break Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Maintenance Break Room Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Receiving Bay Area	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.33	3,292	0.0	$399.18	$708.18	$155.00	1.39
Receiving Bay Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
Receiving Bay Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.04	83	0.0	$10.08	$73.03	$20.00	5.26
Sprinkler Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Maintenance Workshop	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	No	4	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,720	0.15	1,473	0.0	$178.69	$292.12	$80.00	1.19
Electrical Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	548	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	548	0.09	83	0.0	$10.09	$146.06	$40.00	10.51
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
Generator Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.06	651	0.0	$78.97	$109.55	$30.00	1.01
CR 308 Robotics	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
CR 308 Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
CR 307 Wood Shop	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	No	16	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	4,160	0.59	4,286	0.0	$519.83	$1,168.48	$320.00	1.63
CR 307 Wood Shop	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 306 Computer Lab	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.66	4,788	0.0	$580.63	$1,416.36	$310.00	1.91
A/V Office	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.66	6,583	0.0	$798.36	$1,416.36	$310.00	1.39
Stage Control Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.06	651	0.0	$78.97	$109.55	$30.00	1.01
Theater Seating Area	24	Metal Halide: (1) 70W Lamp	Wall Switch	95	5,720	Fixture Replacement	No	24	LED - Fixtures: Ceiling Mount	Wall Switch	29	5,720	1.05	10,498	0.0	$1,273.17	$7,129.91	$240.00	5.41
Theater Seating Area	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
Theater Storage Closet 1	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Theater Storage Closet 2	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26

	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
Audience Seating Row Lights	80	Incandescent: Screw-In: (7W) - 1L	Wall Switch	7	5,720	None	No	80	Incandescent: Screw-In: (7W) - 1L	Wall Switch	7	5,720	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Stage Area	8	Metal Halide: (1) 50W Lamp	Wall Switch	72	5,720	None	No	8	Metal Halide: (1) 50W Lamp	Wall Switch	72	5,720	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Stage 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
Stage Area	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Stage Area	8	Halogen Incandescent: (1) 75W Lamp	Wall Switch	75	5,720	None	No	8	Halogen Incandescent: (1) 75W Lamp	Wall Switch	75	5,720	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Back Stage Room 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Back Stage Room 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Stage Storage	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.06	125	0.0	$15.12	$109.55	$30.00	5.26
CR 302 Ensemble Room	48	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	Yes	48	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	2,912	1.80	13,169	0.0	$1,597.07	$6,297.12	$140.00	3.86
CR 302 Ensemble 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
CR 302 Ensemble Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,160	0.04	316	0.0	$38.29	$73.03	$20.00	1.38
Flag Storage	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.06	125	0.0	$15.12	$109.55	$30.00	5.26
Instrument Storage	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	767	0.25	473	0.0	$57.31	$598.64	$90.00	8.87
Practice Room 6	2	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	No	2	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	4,160	0.06	407	0.0	$49.31	$217.38	$0.00	4.41
Practice Room 5	2	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	No	2	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	4,160	0.06	407	0.0	$49.31	$217.38	$0.00	4.41
Practice Room 4	2	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	No	2	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	4,160	0.06	407	0.0	$49.31	$217.38	$0.00	4.41
Practice Room 3	2	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	No	2	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	4,160	0.06	407	0.0	$49.31	$217.38	$0.00	4.41
Practice Room 2	2	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	No	2	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	4,160	0.06	407	0.0	$49.31	$217.38	$0.00	4.41
Practice Room 1	2	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	No	2	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	4,160	0.06	407	0.0	$49.31	$217.38	$0.00	4.41
CR 301	20	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	Yes	20	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	2,912	0.75	5,487	0.0	$665.45	$2,713.80	$70.00	3.97
Music Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.19	1,931	0.0	$234.21	$562.12	$115.00	1.91
Music Office	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.02	191	0.0	$23.13	$72.46	$0.00	3.13
Music Office Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Large Ensemble Room	57	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	57	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	2.14	21,503	0.0	$2,607.72	$7,275.33	$140.00	2.74
Large Ensemble 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
Large Ensemble Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.08	823	0.0	$99.80	$379.55	$65.00	3.15
Storage Across from Office	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Storage 100	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
CR 101	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 102	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.66	4,788	0.0	$580.63	$1,416.36	$310.00	1.91
CR 102 Meeting Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.25	1,795	0.0	$217.74	$598.64	$125.00	2.18
MDF 103	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.25	2,469	0.0	$299.39	$598.64	$125.00	1.58
Nurse's Office	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.38	3,863	0.0	$468.42	$854.24	$195.00	1.41
Nurse's Office	3	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.11	1,132	0.0	$137.25	$596.07	$35.00	4.09
Nurse's Office RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	1,095	Relamp	No	1	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	1,095	0.03	54	0.0	$6.49	$108.69	$0.00	16.75
Nurse;s Office Storage	1	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	1,095	Relamp	No	1	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	1,095	0.03	54	0.0	$6.49	$108.69	$0.00	16.75
Nurse's Office RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	1,095	Relamp	No	1	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	1,095	0.03	54	0.0	$6.49	$108.69	$0.00	16.75
Nurse's Office 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Nurse's Office Exam Room 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
Nurse's Office Exam Room 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Attendance Office	6	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	6	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.23	2,263	0.0	$274.50	$922.14	$35.00	3.23
CR - A100	9	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	9	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.37	2,693	0.0	$326.60	$762.95	$170.00	1.82
CR - A100	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	4,160	0.04	277	0.0	$33.65	$144.92	$0.00	4.31
CR - A101	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Mech/Elec Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.06	651	0.0	$78.97	$109.55	$30.00	1.01
Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26

	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
CR - A102	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A103	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A104	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.66	4,788	0.0	$580.63	$1,416.36	$310.00	1.91
CR - A105	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A106	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A107	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.98	7,182	0.0	$870.94	$1,854.54	$430.00	1.64
CR - A108	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A109	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.58	4,214	0.0	$511.01	$1,146.36	$275.00	1.71
CR - A109	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 - A109 Conf Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.25	1,795	0.0	$217.74	$598.64	$125.00	2.18
CR - A110	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
CR - A111	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A112	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A113	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A114	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.33	2,394	0.0	$290.31	$708.18	$155.00	1.91
CR - A115	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A116	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Mech/Elec Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.06	651	0.0	$78.97	$109.55	$30.00	1.01
CR - A117	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A118	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36

	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	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
CR 111	11	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	11	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.45	3,292	0.0	$399.18	$872.50	$200.00	1.68
CR 111 RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
CR 112	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 113	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
IDF Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Computer Lab 115	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.66	6,583	0.0	$798.36	$1,416.36	$310.00	1.39
CR 114	11	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	11	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.45	3,292	0.0	$399.18	$872.50	$200.00	1.68
CR 114	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	4,160	0.02	139	0.0	$16.82	$72.46	$0.00	4.31
CR 116	9	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	9	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.37	2,693	0.0	$326.60	$762.95	$170.00	1.82
Room 118	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.25	2,469	0.0	$299.39	$598.64	$125.00	1.58
Computer Lab 117	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.66	6,583	0.0	$798.36	$1,416.36	$310.00	1.39
CR 120	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.25	1,795	0.0	$217.74	$598.64	$125.00	2.18
Computer Lab 119	16	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	16	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.66	6,583	0.0	$798.36	$1,416.36	$310.00	1.39
Elevator Machine Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
M/W RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
CST Suite	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.14	1,448	0.0	$175.66	$489.09	$95.00	2.24
CST Office 1	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,720	0.04	368	0.0	$44.67	$73.03	$20.00	1.19
CST Office 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
Art Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
CR 108 (Art)	20	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	20	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.96	7,023	0.0	$851.68	$2,000.60	$470.00	1.80
CR 108 (Art) Side Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
CR 109 (Journalism)	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	4,160	0.04	277	0.0	$33.65	$144.92	$0.00	4.31

	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 109 (Journalism)	18	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	18	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.74	5,386	0.0	$653.21	$1,525.91	$340.00	1.82
Video/TV Conf Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.16	1,197	0.0	$145.16	$489.09	$95.00	2.71
Studio Area	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
Studio 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
Radio Studio	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Radio Studio	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
Radio Studio	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
CR 106	23	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	23	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	1.11	8,076	0.0	$979.43	$2,219.69	$530.00	1.73
CR 106 Storage	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
CR 106 Finishing Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.08	598	0.0	$72.58	$379.55	$65.00	4.33
CR 105 Home Ec	13	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	13	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.63	4,565	0.0	$553.59	$1,489.39	$330.00	2.09
CR 105 Home Ec	6	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	Yes	6	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	2,912	0.15	1,117	0.0	$135.41	$704.76	$35.00	4.95
CR 105 Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.04	83	0.0	$10.08	$73.03	$20.00	5.26
Mech/Elec Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.09	868	0.0	$105.30	$146.06	$40.00	1.01
Guidance (Main)	17	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	17	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.64	6,413	0.0	$777.74	$2,387.73	$70.00	2.98
Guidance (Main)	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
Guidance Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Guidance Conf Room	8	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	Yes	8	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	2,912	0.30	2,195	0.0	$266.18	$1,139.52	$35.00	4.15
Guidance Conf Room	4	Incandescent: (1) 75W Lamp	Wall Switch	75	4,160	Relamp	Yes	4	LED Screw-In Lamps: LED: (1) 11W Lamp	Occupancy Sensor	11	2,912	0.18	1,288	0.0	$156.18	$338.90	$55.00	1.82
Guidance Office James	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Cavadas	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Pyle	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Demouth	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Riley	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Becker	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66

	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
Guidance Office Riley 2	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance CST Office	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Narang	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Wood	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Karbhari	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Anatharan	4	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	4	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.15	1,509	0.0	$183.00	$704.76	$35.00	3.66
Guidance Office Records	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Office Hallway Area	9	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	9	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.23	2,303	0.0	$279.28	$922.14	$35.00	3.18
Main Office Hallway 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
Main Office Conf Room	6	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	Yes	6	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	2,912	0.23	1,646	0.0	$199.63	$922.14	$35.00	4.44
Main Office Supply Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
Main Office Copy Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
Main Office Mens RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Main Office Womens RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Main Office Admin Conf. Room	8	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	4,160	Relamp	Yes	8	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	2,912	0.30	2,195	0.0	$266.18	$1,139.52	$35.00	4.15
Main Office Principal's Office	9	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	9	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.34	3,395	0.0	$411.75	$1,248.21	$35.00	2.95
Main Office Assistant Principal's Office	6	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	6	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.23	2,263	0.0	$274.50	$922.14	$35.00	3.23
Main Office Work Room	3	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	3	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.08	768	0.0	$93.09	$487.38	$35.00	4.86
Main Office Area	23	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	23	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.59	5,885	0.0	$713.72	$2,206.58	$70.00	2.99
Main Office 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
Media Center	135	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	135	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	3.44	34,544	0.0	$4,189.25	$12,752.10	$385.00	2.95
Media Center	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
Media Center	60	Incandescent: (1) 100W Lamp	Wall Switch	100	5,720	Relamp	Yes	60	LED Screw-In Lamps: LED: (1) 15W Lamp	Occupancy Sensor	15	4,004	3.52	35,324	0.0	$4,283.78	$2,383.50	$475.00	0.45
Media Center	25	Incandescent: (1) 100W Lamp	Wall Switch	100	5,720	Relamp	Yes	25	LED Screw-In Lamps: LED: (1) 15W Lamp	Occupancy Sensor	15	4,004	1.47	14,718	0.0	$1,784.91	$1,240.63	$230.00	0.57
Media Center	11	Metal Halide: (1) 400W Lamp	Wall Switch	458	5,720	Fixture Replacement	Yes	11	LED - Fixtures: Ceiling Mount	Occupancy Sensor	137	4,004	2.61	26,181	0.0	$3,174.96	$3,537.87	$145.00	1.07

	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
Media Center Technical Processing	10	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	10	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.38	3,772	0.0	$457.50	$1,356.90	$35.00	2.89
Media Center Office	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.25	2,469	0.0	$299.39	$598.64	$125.00	1.58
Media Center Storage	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	767	0.27	525	0.0	$63.68	$635.15	$135.00	7.85
CoOp Group Seminar	9	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	5,720	Relamp	Yes	9	LED - Linear Tubes: (3) U-Lamp	Occupancy Sensor	50	4,004	0.34	3,395	0.0	$411.75	$1,248.21	$35.00	2.95
CoOp Group Seminar	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.33	3,292	0.0	$399.18	$708.18	$155.00	1.39
Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	1,095	Relamp	No	1	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	1,095	0.03	54	0.0	$6.49	$108.69	$0.00	16.75
Main Hallway Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 3L	Wall Switch	92	1,095	Relamp	No	1	LED - Linear Tubes: (3) U-Lamp	Wall Switch	50	1,095	0.03	54	0.0	$6.49	$108.69	$0.00	16.75
2nd Floor Storage Room (near elevator)	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	767	0.22	420	0.0	$50.94	$562.12	$80.00	9.46
2nd Floor Large Storage (end hallway)	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
CR 229	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 227	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Janitor Closet (storage room)	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.06	125	0.0	$15.12	$109.55	$30.00	5.26
CR 228	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.33	2,394	0.0	$290.31	$708.18	$155.00	1.91
CR 225	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 226	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
2nd Floor Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
2nd Floor Janitor Closet 2	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
2nd Floor Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
2nd Floor Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
CR 224	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 223	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64

	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 222	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Office 1	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.19	1,931	0.0	$234.21	$562.12	$115.00	1.91
2nd Floor Office 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
2nd Floor Office 3	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
CR - A207	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.98	7,182	0.0	$870.94	$1,854.54	$430.00	1.64
CR - A207	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.10	702	0.0	$85.17	$416.06	$75.00	4.00
CR - A207 Side 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
A208 Faculty Work Room	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.58	5,794	0.0	$702.64	$1,146.36	$275.00	1.24
A208 Faculty Work 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
A208 Conf. / Break Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.29	2,107	0.0	$255.50	$708.18	$155.00	2.17
CR - A205/A206	20	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	20	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.82	5,985	0.0	$725.78	$1,635.45	$370.00	1.74
CR - A205/A206	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 - A205/A206 Side 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 - A205/A206 Side Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,912	0.08	598	0.0	$72.58	$379.55	$65.00	4.33
CR 204	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.98	7,182	0.0	$870.94	$1,854.54	$430.00	1.64
CR 204	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 204 Side Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.10	702	0.0	$85.17	$416.06	$75.00	4.00
CR - A203	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Women's RR 2	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
2nd Floor Men's RR 2	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
CR - A202	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Women's RR 3	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
2nd Floor Men's RR 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
219 Workroom	14	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	14	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.57	5,760	0.0	$698.57	$1,306.82	$280.00	1.47
219 Break room	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.29	2,897	0.0	$351.32	$708.18	$155.00	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 221	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.43	3,160	0.0	$383.26	$927.27	$215.00	1.86
CR 221	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	4,160	0.02	139	0.0	$16.82	$72.46	$0.00	4.31
Roof Access Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
IDF 220	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Mech/Elec Closet	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
CR - A214	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A213	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A212	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A211	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Women's RR 4	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
2nd Floor Men's RR 3	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
CR - A209	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.98	7,182	0.0	$870.94	$1,854.54	$430.00	1.64
CR - A209	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 - A209 Side Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.08	598	0.0	$72.58	$379.55	$65.00	4.33
CR - A210	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Women's RR 5	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
2nd Floor Men's RR 4	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
2nd Floor Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
2nd Floor Mech/Elec Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.06	651	0.0	$78.97	$109.55	$30.00	1.01
CR - A201	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR - A200	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
2nd Floor Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
Room 211 Faculty	14	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	14	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.67	6,760	0.0	$819.74	$1,562.42	$350.00	1.48
Room 211 Conf. Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.29	2,107	0.0	$255.50	$708.18	$155.00	2.17
CR 210	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64

	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
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Women's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
CR 209	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Office (Cooper, Sizemoore)	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.19	1,931	0.0	$234.21	$562.12	$115.00	1.91
Cooper Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
Sizemoore Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
CR 208	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 207	7	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	4,160	Relamp	Yes	7	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,912	0.34	2,458	0.0	$298.09	$781.21	$175.00	2.03
Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Women's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Men's RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
IDF 206	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.16	1,646	0.0	$199.59	$489.09	$95.00	1.97
CR 205	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 203	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 204	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 202	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 201	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 200	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Upper Dining Hall	128	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	128	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	3.26	32,753	0.0	$3,972.03	$11,974.88	$350.00	2.93
Upper Dining Hall	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
Upper Dining Hall	7	Incandescent: (1) 100W Lamp	Wall Switch	100	5,720	Relamp	Yes	7	LED Screw-In Lamps: LED: (1) 15W Lamp	Occupancy Sensor	15	4,004	0.41	4,121	0.0	$499.77	$390.58	$70.00	0.64
Janitor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Kitchen Loading 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

	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
Kitchen Loading Area	3	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	3	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.08	768	0.0	$93.09	$487.38	$35.00	4.86
Kitchen Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.08	823	0.0	$99.80	$379.55	$65.00	3.15
Kitchen Area	25	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	25	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.64	6,397	0.0	$775.79	$2,621.50	$105.00	3.24
Kitchen 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
Food Storage	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.06	125	0.0	$15.12	$109.55	$30.00	5.26
Kitchen Hood	8	Incandescent: (1) 60W Lamp	Wall Switch	60	5,720	Relamp	No	8	LED Screw-In Lamps: LED: (1) 9W Lamp	Wall Switch	9	5,720	0.27	2,684	0.0	$325.47	$137.80	$40.00	0.30
Non-Food Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Kitchen Women's Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Kitchen Locker Room RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Walk-in Freezer	3	Incandescent: (1) 60W Lamp	Wall Switch	60	5,720	Relamp	No	3	LED Screw-In Lamps: LED: (1) 9W Lamp	Wall Switch	9	5,720	0.10	1,006	0.0	$122.05	$51.68	$15.00	0.30
Walk-in Cooler	3	Incandescent: (1) 60W Lamp	Wall Switch	60	5,720	Relamp	No	3	LED Screw-In Lamps: LED: (1) 9W Lamp	Wall Switch	9	5,720	0.10	1,006	0.0	$122.05	$51.68	$15.00	0.30
Kitchen Men's Locker Area	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Kitchen Men's Locker Area RR	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	1,095	0.02	37	0.0	$4.43	$72.46	$0.00	16.36
Kitchen Serving Area	13	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	13	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.33	3,326	0.0	$403.41	$1,481.98	$70.00	3.50
Kitchen Serving 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
Kitchen Wash Area	11	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	11	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.28	2,815	0.0	$341.35	$1,067.06	$35.00	3.02
Faculty Dining	21	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	21	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.54	5,374	0.0	$651.66	$2,061.66	$70.00	3.06
Lower Dining Hall	129	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	129	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	3.29	33,009	0.0	$4,003.06	$12,047.34	$350.00	2.92
Lower Dining Hall	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
Pool Area	29	LED - Fixtures: High-Bay	Wall Switch	60	5,720	None	Yes	29	LED - Fixtures: High-Bay	Occupancy Sensor	60	4,004	0.34	3,434	0.0	$416.41	$810.00	$105.00	1.69
Pool: Men's Locker Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.19	1,920	0.0	$232.86	$525.61	$105.00	1.81
Pool: Men's Locker Room	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
Pool: Men's Locker Room Toilet Area	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Pool: Men's Locker Room Shower Area	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Pool: Men's Locker Room Locker Area	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.33	3,292	0.0	$399.18	$708.18	$155.00	1.39

	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
Pool: Men's Locker Room Coach's Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.12	1,234	0.0	$149.69	$434.32	$80.00	2.37
Pool: Men's Locker Room Coach's Office RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Pool: Men's Locker Room Coach's Office RR	1	Incandescent: (1) 60W Lamp	Wall Switch	60	1,095	Relamp	No	1	LED Screw-In Lamps: LED: Screw-in (1) 9W Lamp	Wall Switch	9	1,095	0.03	64	0.0	$7.79	$17.23	$5.00	1.57
Pool: Women's Locker Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.19	1,920	0.0	$232.86	$525.61	$105.00	1.81
Pool: Women's Locker Room	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
Pool: Women's Locker Room Toilet Area	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Pool: Women's Locker Room Shower Area	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Pool: Women's Locker Room Locker Area	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.33	3,292	0.0	$399.18	$708.18	$155.00	1.39
Pool: Women's Locker Room Coach's Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.12	1,234	0.0	$149.69	$434.32	$80.00	2.37
Pool: Women's Locker Room Coach's Office RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Pool: Women's Locker Room Coach's Office RR	1	Incandescent: (1) 60W Lamp	Wall Switch	60	1,095	Relamp	No	1	LED Screw-In Lamps: LED: Screw-in (1) 9W Lamp	Wall Switch	9	1,095	0.03	64	0.0	$7.79	$17.23	$5.00	1.57
Pool Storage	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	767	0.22	420	0.0	$50.94	$562.12	$80.00	9.46
Pool Pump Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.09	868	0.0	$105.30	$146.06	$40.00	1.01
Main Hallway Men's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Main Hallway Men's RR	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.04	382	0.0	$46.27	$144.92	$0.00	3.13
Main Hall IDF Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Main Hall Janitor Closet	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.06	125	0.0	$15.12	$109.55	$30.00	5.26
Main Hallway Women's RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Main Hallway Women's RR	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.04	382	0.0	$46.27	$144.92	$0.00	3.13
Trainer's Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	0.10	966	0.0	$117.11	$416.06	$75.00	2.91
Trainer's Room	11	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	11	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.45	4,526	0.0	$548.87	$872.50	$200.00	1.23
Trainer's Room RR	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	1,095	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	1,095	0.03	62	0.0	$7.56	$54.77	$15.00	5.26
Trainer's Room Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Athletic Director's Office	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.25	2,469	0.0	$299.39	$598.64	$125.00	1.58
Men's RR	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01

	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	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main 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
Main Gym	48	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	5,720	Relamp	Yes	48	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	4,004	3.62	36,342	0.0	$4,407.27	$6,338.16	$1,580.00	1.08
Main Gym Men's Locker Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Main Gym Men's Locker Room	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
Main Gym Men's Locker Room Shower Area 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Men's Locker Room Toilet Area 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Men's Locker Room Locker Area	19	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	19	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.52	5,212	0.0	$632.04	$1,233.79	$260.00	1.54
Main Gym Men's Locker Room Shower Area 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Men's Locker Room Toilet Area 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Men's Locker Room Coach's Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.12	1,234	0.0	$149.69	$434.32	$80.00	2.37
Main Gym Men's Locker Room Coach's Office RR 1	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Main Gym Men's Locker Room Coach's Office RR 2	1	Incandescent: (1) 60W Lamp	Wall Switch	60	1,095	Relamp	No	1	LED Screw-In Lamps: LED: (1) 9W Lamp	Wall Switch	9	1,095	0.03	64	0.0	$7.79	$17.23	$5.00	1.57
P.E. Storage	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	767	0.33	630	0.0	$76.42	$708.18	$120.00	7.70
Main Gym Women's Locker Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Main Gym Women's Locker Room	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
Main Gym Women's Locker Room Shower Area 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Women's Locker Room Toilet Area 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Women's Locker Room Locker Area	19	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	19	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.52	5,212	0.0	$632.04	$1,233.79	$260.00	1.54
Main Gym Women's Locker Room Shower Area 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Women's Locker Room Toilet Area 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Main Gym Women's Locker Room Coach's Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.12	1,234	0.0	$149.69	$434.32	$80.00	2.37
Main Gym Women's Locker Room Coach's Office RR 1	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.02	42	0.0	$5.04	$36.52	$10.00	5.26
Main Gym Women's Locker Room Coach's Office RR 2	1	Incandescent: (1) 60W Lamp	Wall Switch	60	1,095	Relamp	No	1	LED Screw-In Lamps: LED: (1) 9W Lamp	Wall Switch	9	1,095	0.03	64	0.0	$7.79	$17.23	$5.00	1.57
Men's Team Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.25	2,469	0.0	$299.39	$598.64	$125.00	1.58

	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
Men's Team Room	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
Men's Team Room Toilet Area 1	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Men's Team Room Toilet Area 1	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.02	191	0.0	$23.13	$72.46	$0.00	3.13
Men's Team Room Toilet Area 2	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Men's Team Room Toilet Area 2	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.02	191	0.0	$23.13	$72.46	$0.00	3.13
Men's Team Room Shower Area 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Men's Team Room Shower Area 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Men's Team Room Locker Area	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.49	4,937	0.0	$598.77	$1,197.27	$250.00	1.58
Men's Team Room Storage Room 1	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
Men's Team Room Storage Room 2	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
Men's Team Room Coach's Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.12	1,234	0.0	$149.69	$434.32	$80.00	2.37
Men's Team Room Coach's Office RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56
Women's Team Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.25	2,469	0.0	$299.39	$598.64	$125.00	1.58
Women's Team Room	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
Women's Team Room Toilet Area 1	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Women's Team Room Toilet Area 1	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.02	191	0.0	$23.13	$72.46	$0.00	3.13
Women's Team Room Toilet Area 2	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.02	217	0.0	$26.32	$36.52	$10.00	1.01
Women's Team Room Toilet Area 2	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.02	191	0.0	$23.13	$72.46	$0.00	3.13
Women's Team Room Shower Area 1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Women's Team Room Shower Area 2	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Women's Team Room Locker Area	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.49	4,937	0.0	$598.77	$1,197.27	$250.00	1.58
Women's Team Room Storage Room 1	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
Women's Team Room Storage Room 2	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
Women's Team Room Coach's Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	0.12	1,234	0.0	$149.69	$434.32	$80.00	2.37
Women's Team Room Coach's Office RR	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.11	1,097	0.0	$133.06	$416.06	$75.00	2.56

	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
Field Equipment Storage (400)	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	767	0.27	525	0.0	$63.68	$635.15	$100.00	8.40
Field Equipment Storage (400)	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
Wrestling Room (401)	40	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,720	Relamp	Yes	40	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,004	1.92	19,313	0.0	$2,342.12	$4,001.20	$940.00	1.31
Wrestling Room (401)	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
Janitor Closet and IDF Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.04	83	0.0	$10.08	$73.03	$20.00	5.26
Weight Room (402)	35	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	5,720	Relamp	Yes	35	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	4,004	1.44	14,401	0.0	$1,746.42	$2,727.04	$630.00	1.20
Weight Room (402)	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 (402) Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,095	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,095	0.09	166	0.0	$20.16	$146.06	$40.00	5.26
Electrical Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	548	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	548	0.02	21	0.0	$2.52	$36.52	$10.00	10.52
CR 403	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.33	2,394	0.0	$290.31	$708.18	$155.00	1.91
CR 404	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
CR 405	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	4,160	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,912	0.49	3,591	0.0	$435.47	$927.27	$215.00	1.64
Men's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.08	823	0.0	$99.80	$379.55	$65.00	3.15
Women's RR	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.08	823	0.0	$99.80	$379.55	$65.00	3.15
Aux Gym	26	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	5,720	Relamp	Yes	26	LED - Linear Tubes: (6) 4' Lamps	Occupancy Sensor	87	4,004	1.96	19,685	0.0	$2,387.27	$3,658.17	$885.00	1.16
Aux 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
Aux Gym Hallway	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
Aux Gym Hallway	26	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	26	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	4,004	0.66	6,653	0.0	$806.82	$2,693.96	$105.00	3.21
Aux Gym Hallway	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	4,004	0.41	4,115	0.0	$498.98	$1,087.73	$220.00	1.74
Aux Gym Hallway Entry Foyer	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,720	0.04	434	0.0	$52.65	$73.03	$20.00	1.01
Aux Gym Hallway RR Entry	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,720	0.04	382	0.0	$46.27	$144.92	$0.00	3.13
Main Gym Hallway	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
Main Gym Hallway	24	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	24	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	4,004	0.66	6,583	0.0	$798.36	$1,276.36	$240.00	1.30
Athletic Hallway	30	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,720	Relamp	Yes	30	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	4,004	0.82	8,229	0.0	$997.95	$1,695.45	$300.00	1.40

Motor Inventory & Recommendations

		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
Boiler Room	Absorption chiller blower motor	1	Process Blower	5.0	89.5%	No	4,067	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Absorption chiller blower motor	1	Process Blower	5.0	89.5%	No	4,067	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Absorption chiller blower motor	1	Process Blower	5.0	89.5%	No	4,067	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Heat Supply	1	Heating Hot Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$0.00	2.61
Boiler Room	Heat Supply	1	Heating Hot Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$0.00	2.61
Boiler Room	Heat Supply	1	Heating Hot Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$0.00	2.61
Boiler Room	Heat Supply	1	Heating Hot Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$0.00	2.61
Boiler Room	Chilled Water Supply	1	Chilled Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$1,800.00	2.05
Boiler Room	Chilled Water Supply	1	Chilled Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$1,800.00	2.05
Boiler Room	Chilled Water Supply	1	Chilled Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$1,800.00	2.05
Boiler Room	Chilled Water Supply	1	Chilled Water Pump	30.0	92.4%	No	2,542	No	92.4%	Yes	1	3.65	26,783	0.0	$3,247.97	$8,472.05	$1,800.00	2.05
Boiler Room	DHW	4	Water Supply Pump	0.1	65.0%	No	4,067	No	65.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Boiler Feed Pump	4	Boiler Feed Water Pump	25.0	92.4%	No	4,067	No	92.4%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pool Pump Room	Circulation Pumps	2	Process Pump	15.0	92.4%	No	8,760	No	92.4%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Cooling tower pump room	Cooling Tower Pumps	3	Process Pump	20.0	93.0%	No	3,391	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 2	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU 2	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 3	1	Supply Fan	15.0	92.4%	No	3,391	No	92.4%	Yes	1	4.07	14,630	0.0	$1,774.19	$5,194.45	$1,200.00	2.25
Roof	RTU 3	1	Return Fan	5.0	89.5%	No	3,391	No	89.5%	Yes	1	0.68	2,544	0.0	$308.49	$3,275.85	$400.00	9.32
Roof	RTU 4-1	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49

		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	RTU 4-1	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 4	1	Supply Fan	40.0	94.1%	No	3,391	No	94.1%	Yes	1	10.65	38,308	0.0	$4,645.70	$9,366.05	$3,200.00	1.33
Roof	RTU 4	1	Return Fan	30.0	93.6%	No	3,391	No	93.6%	Yes	1	8.03	28,885	0.0	$3,502.89	$8,472.05	$2,400.00	1.73
Roof	RTU 5	1	Supply Fan	7.5	91.7%	No	3,391	No	91.7%	Yes	1	0.99	3,724	0.0	$451.64	$3,606.80	$600.00	6.66
Roof	RTU 5	1	Return Fan	5.0	89.5%	No	3,391	No	89.5%	Yes	1	0.68	2,544	0.0	$308.49	$3,275.85	$400.00	9.32
Roof	RTU 6	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU 6	1	Return Fan	5.0	89.5%	No	3,391	No	89.5%	Yes	1	0.68	2,544	0.0	$308.49	$3,275.85	$400.00	9.32
Roof	RTU 7	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU 7	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 8	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU 8	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 9	1	Supply Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 10	1	Supply Fan	7.5	91.7%	No	3,391	No	91.7%	Yes	1	0.99	3,724	0.0	$451.64	$3,606.80	$600.00	6.66
Roof	RTU 11	1	Supply Fan	7.5	91.7%	No	3,391	No	91.7%	Yes	1	0.99	3,724	0.0	$451.64	$3,606.80	$600.00	6.66
Roof	RTU 11	1	Return Fan	1.0	85.5%	No	3,391	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 13	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU 13	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 14	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU 14	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU 15	1	Supply Fan	15.0	92.4%	No	3,391	No	92.4%	Yes	1	4.07	14,630	0.0	$1,774.19	$5,194.45	$1,200.00	2.25

		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	RTU 15	1	Return Fan	5.0	89.5%	No	3,391	No	89.5%	Yes	1	0.68	2,544	0.0	$308.49	$3,275.85	$400.00	9.32
Roof	RTU DI	1	Supply Fan	10.0	89.5%	No	3,391	Yes	91.7%	Yes	1	2.83	10,285	0.0	$1,247.33	$5,151.50	$800.00	3.49
Roof	RTU DI	1	Return Fan	3.0	89.5%	No	3,391	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	RTU CI	1	Supply Fan	15.0	92.4%	No	3,391	No	92.4%	Yes	1	1.96	7,392	0.0	$896.43	$5,194.45	$1,200.00	4.46
Roof	RTU CI	1	Return Fan	5.0	89.5%	No	3,391	No	89.5%	Yes	1	0.68	2,544	0.0	$308.49	$3,275.85	$400.00	9.32
Roof	Whole Building	28	Exhaust Fan	1.0	85.5%	No	3,391	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Whole Building	36	Exhaust Fan	0.5	70.0%	No	3,391	No	70.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Whole Building	70	Exhaust Fan	0.3	70.0%	No	3,391	No	70.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Elevator machine room	Elevator	1	Other	20.0	93.0%	No	800	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Second Floor Rooms	Unit Ventilators	50	Supply Fan	1.0	80.0%	No	3,391	No	80.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
1st Floor Rooms	Unit Ventilators	45	Supply Fan	1.0	85.5%	No	3,391	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Cooling tower fans	Cooling Tower Fans	3	Cooling Tower 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
Corridor ceilings	Corridors	8	Supply 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

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	Offices	1	Split-System AC	12.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Server Room	1	Ductless Mini-Split HP	1.50	1.83	No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Offices	1	Split-System AC	1.20		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Offices	1	Packaged AC	16.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Server Room	1	Ductless Mini-Split AC	1.80		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Server Room	1	Ductless Mini-Split AC	4.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Whole Building	Storage Rooms	5	Electric Resistance Heat		51.18	No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

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	Non-Condensing Hot Water Boiler	3,360.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Non-Condensing Hot Water Boiler	3,360.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Non-Condensing Hot Water Boiler	3,360.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Non-Condensing Hot Water Boiler	4,696.00	Yes	1	Non-Condensing Hot Water Boiler	4,696.00	85.00%	Ec	0.00	0	426.4	$3,537.53	$80,467.47	$0.00	22.75

Demand Control Ventilation Recommendations

		Recommendation Inputs				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Affected	Number of Zones	Cooling Capacity of Controlled System (Tons)	Electric Heating Capacity of Controlled System (kBtu/hr)	Output Heating Capacity of Controlled System (MBh)	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
RTU 2	Media Center	1	38.00		255.00	0.00	724	13.8	$202.49	$1,359.42	$0.00	6.71
RTU 7	Lower Dining	1	20.00		840.00	0.00	381	45.5	$424.04	$1,359.42	$0.00	3.21
RTU 8	Kitchen	1	47.00		584.00	0.00	895	31.7	$371.27	$1,359.42	$0.00	3.66
RTU 15	Wrestling Room	1	18.00		210.00	0.00	343	11.4	$136.04	$1,359.42	$0.00	9.99
RTU CI	Upper Dining	1	20.00		840.00	0.00	381	45.5	$424.04	$1,359.42	$0.00	3.21
RTU DI	Aux Gym	1	10.00		197.00	0.00	191	10.7	$111.71	$1,359.42	$0.00	12.17

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	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Boiler Room	Whole Building	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Low-Flow Device Recommendations

	Recommedation Inputs				Energy Impact & Financial Analysis						
Location	Device Quantity	Device Type	Existing Flow Rate (gpm)	Proposed Flow Rate (gpm)	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
Whole Building Restrooms	21	Faucet Aerator (Lavatory)	3.00	1.00	0.00	0	71.6	$594.30	$150.57	$0.00	0.25
Whole Building Locker Rooms	18	Showerhead	2.50	2.00	0.00	0	17.1	$141.50	$1,607.40	$0.00	11.36

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	1	Medium Temp Freezer (0F to 30F)	Yes	Yes	Yes	0.10	3,025	0.0	$366.84	$3,102.50	$125.00	8.12
Kitchen	1	Cooler (35F to 55F)	Yes	Yes	Yes	0.07	1,154	0.0	$140.00	$2,799.20	$125.00	19.10

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	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
Kitchen	2	Stand-Up Refrigerator, Solid Door (16 - 30 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	2	Stand-Up Freezer, Solid Door (16 - 30 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen/Serving Area	8	Stand-Up Refrigerator, Glass Door (≤15 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Commercial Ice Maker Inventory & Recommendations

	Existing Conditions			Proposed Condi	Energy Impact & Financial Analysis						
Location	Quantity	Ice Maker 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	1	Ice Making Head (<450 lbs/day), Batch	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Trainer's Room	1	Ice Making Head (<450 lbs/day), Batch	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	2	Gas Fryer	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Griddle (4 Feet Width)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	5	Gas Convection Oven (Full Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	5	Insulated Food Holding Cabinet (Full Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Dishwasher Inventory & Recommendations

	Existing Conditions					Proposed Conditions	Energy Impact & Financial Analysis						
Location	Quantity	Dishwasher Type	Water Heater Fuel Type	Booster Heater Fuel 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	Payback w/ Incentives in Years
Kitchen	1	Door Type (High Temp)	Natural Gas	Electric	Yes	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	580	Desktops	150.0	Yes
Whole Building	67	Projectors	200.0	Yes
Whole Building	41	Desk Printers	30.0	Yes
Whole Building	11	Photocopiers	600.0	Yes
Whole Building	15	Smartboards	25.0	Yes
Whole Building	12	CRT TVs	120.0	Yes
Whole Building	6	Coffee makers	900.0	Yes
Whole Building	11	LCD TVs	100.0	Yes
Whole Building	3	Shredders	150.0	Yes
Whole Building	11	Minifiride	153.0	Yes
Whole Building	9	Refrigerators	172.0	Yes
Whole Building	23	Microwaves	1,000.0	Yes
Whole Building	5	Water cooler/heater	500.0	Yes
Whole Building	4	3D Printers	250.0	Yes
Art Room	1	Kiln	1,150.0	No
Whole Building	1,380	Chromebooks	45.0	Yes
Wood Shop	1	Misc Shop Equipment	1,050.0	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
Upper Dining Hall	1	Non-Refrigerated	Yes	0.00	343	0.0	$41.54	$230.00	$0.00	5.54
Upper Dining Hall	1	Refrigerated	Yes	0.00	1,612	0.0	$195.47	$230.00	$0.00	1.18
Upper Dining Hall	1	Refrigerated	Yes	0.00	1,612	0.0	$195.47	$230.00	$0.00	1.18
Lower Dining Hall	1	Refrigerated	Yes	0.00	1,612	0.0	$195.47	$230.00	$0.00	1.18
Men's Team Room	1	Refrigerated	Yes	0.00	1,612	0.0	$195.47	$230.00	$0.00	1.18

Appendix B: ENERGY STAR® Statement of Energy Performance

ENERGY STAR® Statement of Energy Performance

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ENERGY STAR® Score[1]

High School North

Primary Property Type: K-12 School
Gross Floor Area (ft²): 323,931
Built: 1997

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 North 90 Grovers Mill Road Plainsboro, New Jersey 08536	_____ , (___)___-_____	___ _____ , (___)___-_____ _____

Property ID: 6388300

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
102.3 kBtu/ft²

Source EUI
188.1 kBtu/ft²

Annual Energy by Fuel	
Natural Gas (kBtu)	18,002,840 (54%)
Electric - Solar (kBtu)	212,820 (1%)
Electric - Grid (kBtu)	14,938,439 (45%)

National Median Comparison	
National Median Site EUI (kBtu/ft²)	75.3
National Median Source EUI (kBtu/ft²)	138.4
% Diff from National Median Source EUI	36%
Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	2,470

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)