Local Government Energy Audit:
Energy Audit Report

Gloucester County Vocational Technical School

Gloucester County Vocational Technical School
1360 Tanyard Road
Sewell, NJ 08080

March 23, 2018

Final Report by:

TRC Energy Services

Disclaimer

The intent of this energy analysis report is to identify energy savings opportunities and recommend upgrades to the facility's energy using equipment and systems. Approximate saving are included in this report to help make decisions about reducing energy use at the facility. This report, however, is not intended to serve as a detailed engineering design document. Further design and analysis may be necessary in order to implement some of the measures recommended in this report.

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

Estimated installation costs are based on TRC's experience at similar facilities, pricing from local contractors and vendors, and/or cost estimates from *RS Means*. The owner of the facility is encouraged to independently confirm these cost estimates and to obtain multiple estimates when considering measure installations. Since actual installed costs can vary widely for certain 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.

New Jersey's 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. The owner of the facility should review available program incentives and eligibility requirements prior to selecting and installing any energy conservation measures.

Table of Contents

Table of Figures

1 EXECUTIVE SUMMARY

The New Jersey Board of Public Utilities (NJBPU) has sponsored this Local Government Energy Audit (LGEA) Report for Gloucester County Vocational Technical School.

The goal of an 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 school districts in controlling energy costs and protecting our environment by offering a wide range of energy management options and advice.

1.1 Facility Summary

Gloucester County Vocational Technical School is a vocational school complex totaling 390,558 square feet, originally constructed in 1974. The facility is comprised of many sections connected by a walkway. Interior lighting consists primarily of 32-Watt T8 fluorescent fixtures, which are inefficient in performance when compared to the latest lighting technology available in the market. Cooling is provided by window air conditioners (ACs), split system ACs and rooftop packaged units. The heating system consists of condensing and non-condensing hot water boilers as well as gas-fired furnaces.

A thorough description of the facility and our observations are in Section 2.

1.2 Your Cost Reduction Opportunities

Energy Conservation Measures

TRC evaluated 15 measures. Eleven (11) measures were recommended for implementation which together represent an opportunity for Gloucester County Vocational Technical School to reduce annual energy costs by 252,435 and annual greenhouse gas emissions by 1,918,660 lbs CO_2e. We estimate that if all measures were implemented as recommended, the project would pay for itself in 5.4 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 Gloucester County Vocational Technical School's annual energy use by 31%.

Figure 1 – Previous 12 Month Utility Costs

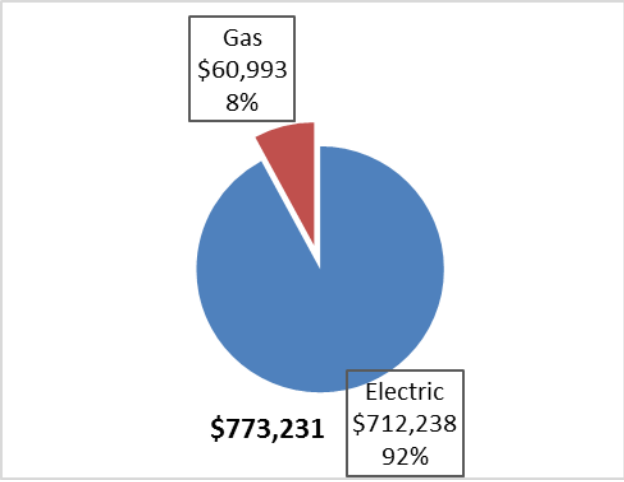
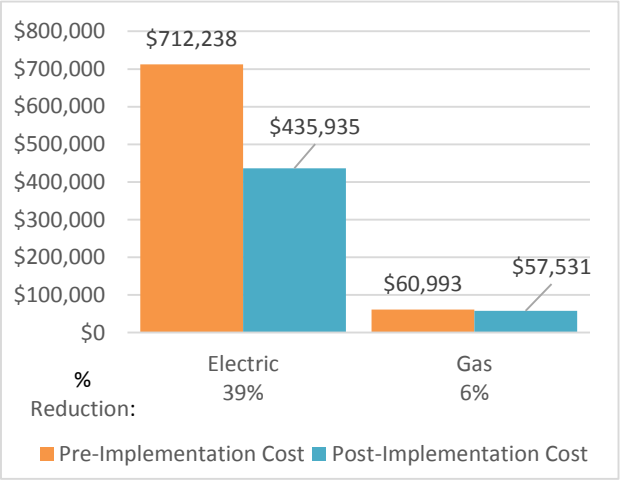


Figure 2 – Potential Post-Implementation Costs



A detailed description of Gloucester County Vocational Technical School's existing energy use can be found in Section 3.

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

Figure 3 – Summary of Energy Reduction Opportunities

	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**1,417,026**	**147.4**	**0.0**	**$188,213.26**	**$445,625.87**	**$63,175.00**	**$382,450.87**	**2.0**	**1,426,934**
ECM 1	Install LED Fixtures	Yes	351,966	37.2	0.0	$46,749.09	$138,898.05	$6,755.00	$132,143.05	2.8	354,427
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,053,274	109.5	0.0	$139,898.64	$285,754.60	$56,420.00	$229,334.60	1.6	1,060,638
ECM 3	Install LED Exit Signs	Yes	11,787	0.8	0.0	$1,565.53	$20,973.23	$0.00	$20,973.23	13.4	11,869
Lighting Control Measures			**316,120**	**32.7**	**0.0**	**$41,987.86**	**$87,198.00**	**$12,130.00**	**$75,068.00**	**1.8**	**318,330**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	262,634	27.1	0.0	$34,883.76	$76,198.00	$12,130.00	$64,068.00	1.8	264,470
ECM 5	Install High/Low Lighitng Controls	Yes	53,486	5.5	0.0	$7,104.09	$11,000.00	$0.00	$11,000.00	1.5	53,859
Motor Upgrades			**2,569**	**1.0**	**0.0**	**$341.23**	**$3,874.63**	**$0.00**	**$3,874.63**	**11.4**	**2,587**
ECM 6	Premium Efficiency Motors	Yes	2,569	1.0	0.0	$341.23	$3,874.63	$0.00	$3,874.63	11.4	2,587
Variable Frequency Drive (VFD) Measures			**26,893**	**8.2**	**124.3**	**$5,031.53**	**$25,770.41**	**$3,000.00**	**$22,770.41**	**4.5**	**41,640**
ECM 7	Install VFDs on Constant Volume (CV) HVAC	Yes	13,563	6.8	0.0	$1,801.53	$11,021.55	$2,000.00	$9,021.55	5.0	13,658
	Install VFDs on Hot Water Pumps	No	4,793	1.3	0.0	$636.68	$11,473.01	$0.00	$11,473.01	18.0	4,827
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	Yes	8,536	0.0	124.3	$2,593.31	$3,275.85	$1,000.00	$2,275.85	0.9	23,155
Electric Unitary HVAC Measures			**190,068**	**112.6**	**0.0**	**$25,245.32**	**$918,604.50**	**$31,429.64**	**$887,174.86**	**35.1**	**191,397**
	Install High Efficiency Electric AC	No	190,068	112.6	0.0	$25,245.32	$918,604.50	$31,429.64	$887,174.86	35.1	191,397
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**123.3**	**$1,447.14**	**$137,410.09**	**$11,914.40**	**$125,495.69**	**86.7**	**14,436**
	Install High Efficiency Hot Water Boilers	No	0	0.0	66.6	$781.17	$58,291.13	$6,714.40	$51,576.73	66.0	7,793
	Install High Efficiency Furnaces	No	0	0.0	56.7	$665.97	$79,118.95	$5,200.00	$73,918.95	111.0	6,643
HVAC System Improvements			**121,110**	**27.3**	**0.0**	**$16,086.13**	**$38,350.00**	**$15,250.00**	**$23,100.00**	**1.4**	**121,957**
ECM 9	Install Dual Enthalpy Outside Economizer Control	Yes	121,110	27.3	0.0	$16,086.13	$38,350.00	$15,250.00	$23,100.00	1.4	121,957
Domestic Water Heating Upgrade			**0**	**0.0**	**47.4**	**$555.96**	**$215.10**	**$0.00**	**$215.10**	**0.4**	**5,546**
ECM 10	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	47.4	$555.96	$215.10	$0.00	$215.10	0.4	5,546
Plug Load Equipment Control - Vending Machine			**6,447**	**0.0**	**0.0**	**$856.36**	**$920.00**	**$0.00**	**$920.00**	**1.1**	**6,492**
ECM 11	Vending Machine Control	Yes	6,447	0.0	0.0	$856.36	$920.00	$0.00	$920.00	1.1	6,492
TOTALS FOR RECOMMENDED MEASURES			**1,885,372**	**215.2**	**171.7**	**$252,435.64**	**$590,481.00**	**$93,555.00**	**$496,926.00**	**2.0**	**1,918,660**
TOTALS FOR EVALUATED MEASURES			**2,080,233**	**329.1**	**295.0**	**$279,764.78**	**$1,657,968.60**	**$136,899.04**	**$1,521,069.56**	**5.4**	**2,129,319**

* - 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). Motor 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 than usage of a valve or damper to control flow rates, or running the motor at full speed when only partial power is needed. These measures save energy by controlling motor usage more efficiently.

Electric Unitary HVAC measures generally involve replacing older inefficient air conditioning systems with modern energy efficient systems. New air conditioning systems can provide equivalent cooling to older air condition systems at a reduced energy cost. These measures save energy by reducing the power used by the air conditioning systems, due to improved electrical efficiency.

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

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.

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 15 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 life, improve occupant comfort, provide better health and safety, as well as reduce annual energy and O&M costs. Potential opportunities identified at Gloucester County Vocational Technical School include:

- Reduce Air Leakage
- Close Doors and Windows
- Perform Proper Lighting Maintenance
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Reduce Motor Short Cycling
- Perform Routine Motor Maintenance
- Use Fans to Reduce Cooling Load
- Practice Proper Use of Thermostat Schedules and Temperature Resets
- Ensure Economizers are Functioning Properly
- Clean Evaporator/Condenser Coils on AC Systems
- Clean and/or Replace HVAC Filters
- Check for and Seal Duct Leakage
- Perform Maintenance on Compressed Air Systems
- 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 Gloucester County Vocational Technical School. Based on the configuration of the site and its loads there is a low potential for installing any PV and combined heat and power self-generation measures.

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)
- 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 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.

Furthermore, 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 8.3 for additional information on the ESIP Program.

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

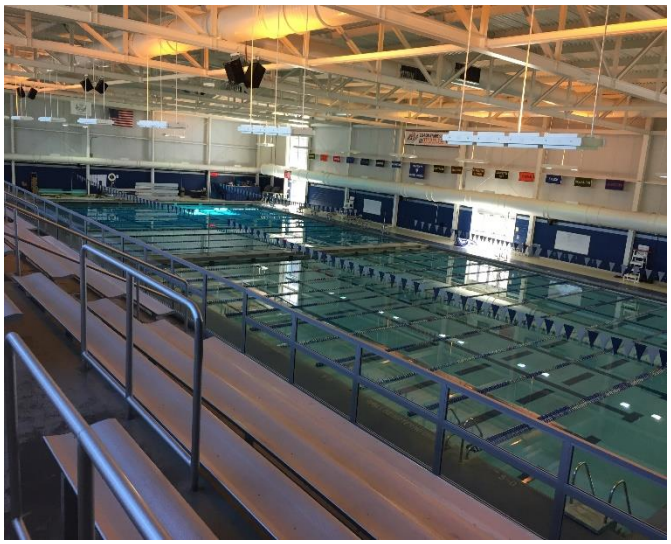
2 FACILITY INFORMATION AND EXISTING CONDITIONS

2.1 Project Contacts

Figure 4 – Project Contacts

Name	Role	E-Mail	Phone #
Customer			
Ami Capriotti	Asst. Superintendent for Business	acapriotti@gcecnj.org	856-468-1445 Ext 2601
Designated Representative			
Darren O'Brian	Maintenance Personnel		609-820-6751
TRC Energy Services			
Moussa Traore	Auditor	mtraore@trcsolutions.com	(732) 855-0033

2.2 General Site Information



On October 5, 2017, TRC performed an energy audit at Gloucester County Vocational Technical School located in Sewell, New Jersey. TRC's auditor met with Darren O'Brian, Maintenance Personnel to review the facility operations and help focus our investigation on specific energy-using systems.

Gloucester County Vocational Technical School is a 390,558-square foot vocational school complex comprised of various buildings types which are connected by a walkway. The original building was constructed in 1974 with the latest addition in 2006. The 600-wing building which houses the district offices, the 1,200-wing and the 200-wing buildings are two-story buildings. The remaining school buildings are single floor buildings. The facility is comprised of many space types including an indoor pool, administrative offices, conference rooms, media center, technical classrooms, commercial kitchens, TV studio, dance rooms, gymnasiums, locker rooms, storage and mechanical rooms.

2.3 Building Occupancy

The school operates on a 12-month schedule. The facility is open Monday through Saturday. The gymnasiums and the indoor pool are used after classes and on weekends for sports and other events. The entire facility is shut down around 11 PM after the cleaning process. During a typical day, the facility is occupied by approximately 1,700 staff and students. The building typical hours of operation is presented in the table below.

Figure 5 - Building Schedule

Building Name	Weekday/Weekend	Operating Schedule
Gloucester County Vocational Technical School	Weekday	7:30 AM - 6:00 PM
Gloucester County Vocational Technical School	Weekend	8:30 AM - 5:00 PM

2.4 Building Envelope

The foundation consists of cast-in-place concrete perimeter wall. Exterior walls are finished with brick masonry. The facility has flat roofs covered with a thermoplastic membrane that is in good condition. Typical windows throughout the facility are double pane with aluminum frames. Portions of the 500-wing windows are beginning to show signs of outside air infiltration. Exterior doors are constructed of metal and glass and are in good condition. Some technical classrooms and the loading dock have garage bay doors which appear to be in good condition. Overall, the envelope appears to be in good condition.

2.5 On-Site Generation

Gloucester County Vocational Technical School District implemented a solar project six (6) years ago. The Vocational Technical School has two (2) 260 kW photovoltaic (PV) arrays (totaling 520 kW) installed on the roofs. The PV arrays systems provide approximately 46% of the electricity required by the facility.

The facility also has five (5) backup generators that run on diesel.

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 fluorescent T8 lamps with electronic ballasts. Most of the fixtures are 2-lamp or 4-lamp, 4-foot long troffers with diffusers. There are a few 28-Watt fluorescent linear T5 lamps that are found in gymnasiums and some classrooms. In addition to linear fluorescent fixtures, the facility has several metal halide fixtures (100-Watt, 175-Watt, 250-Watt, 400-Watt, and 1000-Watt) providing lighting to spaces such as the theater, 300-wing boiler room, 400-wing corridors and the indoor pool. A small number of incandescent and compact fluorescent lamps are found in the spaces such as dressing rooms, corridors, and locker rooms. Exit signs throughout the facility are fluorescent lamps. Interior lighting control is provided primarily by manual wall switches except a few rooms which have occupancy sensors.

The school has started retrofitting most of its exterior lighting with LED fixtures which consist of 57-Watt LED outdoor wall-mounted fixtures and 36-Watt LED pole mounted walkway fixtures, and some 100-Watt metal halide lamps. They are all on timers.

Hot Water Heating System

The hot water system consists of six (6) non-condensing and four (4) condensing hot water boilers located in four (4) different boiler rooms.

The new 200-wing boiler room has two (2) Weil McLAIN non-condensing hot water boilers with an output capacity of 1,263 MBh and a nominal combustion efficiency of 81%. They serve the new 100 and 200-wings. Hot water is distributed to hydronic baseboards and others terminal units by two (2) 5 hp pumps controlled with variable frequency drives (VFDs). The boilers are 12 years old and are well maintained. The boilers are controlled by a Weil McLain hydronic sequence control system with a capability of changing temperature setpoint based on the outdoor temperature and return water temperature. The heating temperature setpoint is 73°F when the outside temperature is 59°F.

The 300-wing boiler room has four (4) AERCO condensing hot water boilers. Two (2) boilers serve the old 100, 200 and 300-wing. Heating hot water generated by these boilers is distributed by two (2) 15 hp variable speed pumps. The other two (2) boilers serve the 400, 1100 and 1200-wing and two (2) 7.5 hp pumps that also run on variable speed are used to distribute heating hot water to hydronic baseboards and other terminal units. The boilers have an output capacity of 1,860 MBh and a combustion efficiency of 93% each. They are eight (8) years old and appear in good condition. The boilers are controlled by a Honeywell building energy management system in conjunction with an AERCO boiler management system (BMS II).

The 500-wing boiler room has two (2) Smith non-condensing hot water boilers with an output capacity of 1,526 MBh and an estimated nominal combustion efficiency of 80%. They serve the 500-wing section. The boilers are 24 years old and appear in fair condition. Two (2) 2 hp and one (1) 0.5 hp pumps that run on constant speed are used to distribute heating hot water to hydronic baseboards and other terminal units. There are also two (2) 0.2 hp recirculation pumps.

Room 635 houses two (2) Weil McLAIN non-condensing hot water boilers with an output capacity of 296 MBh and an estimated nominal combustion efficiency of 80%. They serve the 600-wing (district offices). Two (2) 0.3 hp constant speed pumps are used to distribute heating hot water to the baseboard and two (2) 1.5 hp variable speed pumps distribute hot water to perimeter fin tube radiators. The boilers are 11 years old and are well maintained.

The facility heating end devices include new unit ventilators, fan coil units, cabinet heaters, heating coils in air handling units and perimeter fin tube radiation.

Direct Expansion Air Conditioning System (DX)

The cooling system for the facility consists of window units, split systems and rooftop packaged units. The system consists of new (efficient) and old (inefficient) equipment. There are three (3) Carrier and one (1) Frigidaire window units serving primarily the small offices and ranging from 0.67 to 2 ton. Sixty- three (63) split systems ranging from 0.95 to 25 ton and 77 packaged units ranging from 2.5 to 35 ton are used to condition the facility. All the packaged units and most of the split system air conditioners (ACs) are located on the roofs.

The 600-wing has one (1) 30-ton Carrier packaged AC serving the first floor and one (1) 35-ton serving the second floor. The units utilize a scroll compressor and a direct-expansion (DX) coil with a gas fired furnace and outside air economizer to utilize free cooling when the outside air temperature is lower than the return air temperature. They provide variable air volume with a 15 hp and 20 hp supply fan, respectively, and four

(4) 1 hp exhaust power fan each. The gas heating section of each unit has an output capacity of 283 MBh with a combustion efficiency of 81%. The units are scheduled Monday to Friday from 6:00 AM to 9:00 PM. Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are in each space. Heated and cooled air is distributed through ducts to 27 variable air volume (VAV) terminals concealed above the ceilings in each common area and tenant space. The heating and cooling systems are controlled by programmable thermostats. The units are 12 years old.

The new gymnasium, its hallway and locker rooms are served by one (1) 20-ton (AC3) and one (1) 9-ton (AC4) AAON packaged, respectively, with a gas fired furnace section and an outside air economizer. They provide constant air volume with 15 hp and 3 hp supply fans, 5 hp and 2 hp return fans respectively. The gas heating output capacity are 219 and 156 MBh, respectively. The units are eight (8) years old and appear in good condition. The heating and cooling systems are controlled by programmable thermostats.

One (1) 30-ton Carrier constant air volume with outside air economizer and a gas fired furnace section is used to condition the old gymnasium. The unit utilizes a scroll compressor and a direct-expansion (DX) coil with a 10 hp supply fan and four (4) 1 hp exhaust fans. The unit is 13 years old and appears in fair condition.

The 500-wing common areas and the boys dance studio are each served by one (1) 17.5-ton Trane packaged with outside air economizer. The units are equipped with hot water coil for heating. The units are constant air volume with a 7.5 hp supply fan and no return fan. The units utilize a scroll compressor and a direct-expansion (DX) coil. The heating and cooling systems are controlled by programmable thermostats. The units are two (2) years old and are in good condition.

The 500-wing dance room is served by one (1) 25-ton Trane packaged equipped with outside air economizer and heating hot water coil. It provides a constant air volume with a 7.5 hp supply fan and no return fan. The unit is two (2) years and is in good condition. The offices of the 500-wing section are conditioned by one (1) 15-ton constant air volume Trane packaged with a gas furnace section and outside air economizer. It is two (2) years old and in good condition.

Heated and cooled air is distributed through ducts to 22 variable air volume (VAV) terminals concealed above the ceilings in each common area and tenant space of the 500-wing section of the facility.

The pool locker rooms are served by one (1) 25-ton (four-year-old) Trane split system AC while the theater and its stage are served by two (2) 20-ton and two (2) 15-ton Trane packaged units respectively. They are equipped with outside air economizer and heating hot water coils. The units are 16 years old and have passed their useful service live.

The cafeteria is conditioned by one (1) 35-ton Carrier packaged equipped with outside air economizer and gas furnace section. The unit utilizes a scroll compressor and DX coil. It provides a constant air volume with a 15 hp supply fan and two (2) 1 hp return fan. The gas furnace section has an output capacity of 283.5 MBh with a combustion efficiency of 81%. The unit is 13 years old. The heating and cooling systems are controlled by programmable thermostats.

The 1100 and 1200-wing are each served by one (1) 31-ton AAON packaged equipped with outside air economizer and gas furnace section. The units utilize a scroll compressor and a DX coil. They provide a constant air volume with two (2) 15 hp supply fans and two (2) 3 hp return fans. The units are scheduled Monday to Friday from 3:00 AM to 9:00 PM. Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are in each space. Heated and cooled air is distributed through ducts to 29 variable air volume (VAV) terminals concealed above the ceilings in each common area and tenant space. The gas furnace section of each unit has an output capacity of 432 MBh with a combustion efficiency of 80%. The units are eight (8) years old and appear in good condition. The heating and cooling systems are controlled by programmable thermostats.

The new 100- and 200 wings are served by one (1) 30-ton (AC1) and one (1) 55-ton (AC2), respectively, Trane packaged equipped with outside air economizer and gas furnace section. The units utilize a scroll compressor and a DX coil. They provide a constant air volume with 15 and 25 hp supply fans, 10- and 7.5hp return fans, respectively. The units are scheduled Monday to Friday from 3:00 AM to 9:00 PM. They have a gas heating capacity of 400 and 680 MBh, respectively. The heating and cooling systems are controlled by programmable thermostats. The units are nine (2) years old and are in good condition.

Many common areas such as classrooms, warehouse, offices, fitness room, staff cafeteria, printing room, black box room, IT rooms, teacher rooms, cafeteria, kitchens, science laboratories are served either by a packaged unit equipped with outside air economizer and a gas furnace section/hot water heating coil, or a split system AC. While some units are one (1) or two (2) years old, most of the units are near the end or have passed their useful life service.

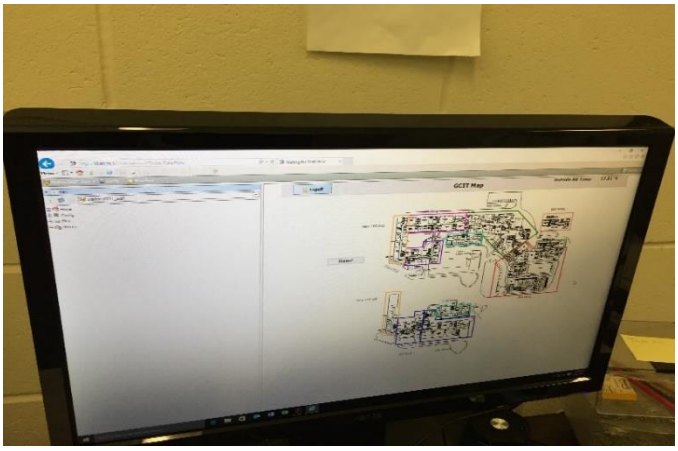
The main data center is served by six (6) 5-ton Heatcraft split ACs. They are eight (8) years old and are in good condition.

Air is exhausted from the toilet rooms, corridors, classrooms, laboratories, and dining areas through the roof exhausters.

Air Distribution System

The large indoor pool is served by one (1) constant volume air handler unit equipped with hot water coil for heating and two (2) Dectron dehumidifier units. The site contact mentioned that the Dectron units are running 24 hours, 7 days a week. Indoor pool is not subjected to the environment, but it still can lose a lot of energy from evaporation. Covering the pool when it's not in use is the single most effective way of reducing pool heating costs, and the United States Department of Energy study shows that savings of 50%-70% are possible. The auto shop and the woodshop have two (2) and one (1) constant volume air handlers, respectively, equipped with hot water coils which are seldom used. The units are above the ceiling and are not accessible.

Building Energy Management System (BEMS)



The facility has started installing a web access Niagara software BEMS system, and when completed, it will have a capability of aggregating the direct digital control (DDC) points from throughout the buildings.

Domestic Hot Water Heating System

The domestic hot water heating system for the facility consists of seven (7) domestic hot water heaters located in different location.

The new 200-wing boiler room has one (1) Bradford White non-condensing hot water heater with an input rating of 200 MBh and a combustion efficiency of 80%. The water heater serves the new 100- and 200-wings and has a 98-gallon storage tank. The unit is eight(8) years old and is well maintained.

The old 100-, 200- and 300-wings are served by one (1) Weben Jarco non-condensing water heater with an input rating of 500 MBh and a combustion efficiency of 80%. The water heater is located in the 300-wing boiler room and has a separate 400-gallon storage tank. One (1) 0.3 hp recirculation pump distributes 120°F water to the three (3) sections of the facility. The water heater is 17 years old and appears to be in fair condition.

The 300- and 400-wings are served by one (1) A.O Smith gas fired non-condensing water heater located in the old warehouse. It has an input rating of 800 MBh, a combustion efficiency of 82% and a 400-gallon storage tank. Two (2) 1.5 hp recirculation pumps distribute 120°F water to these sections of the facility. The water heater is four (4) years old and appears to be in good condition.

The 500-wing locker rooms are served by one (1) A.O Smith gas fired non-condensing water heater with an input rating of 420 MBh and a combustion efficiency of 82%. It is located in the 500-wing mechanical room and has two (2) separate storage tanks with a capacity of 200-gallon each. The water heater is eight (3) years old and is in good condition.

Room 635 houses one (1) Bradford White electric water heater with an input rating of 4.5 kW serving the 600-wing building. The water heater is one (1) year old and has a 50-gallon storage tank.

The 100-wing kitchen is also served by one (1) Bradford White electric water heater with an input rating of 4.5 kW located in room 1114. The water heater is seven (7) years old and has a 40-gallon storage tank.

The 500-wing domestic hot water heater consists of one (1) A.O Smith gas fired water heater with an input rating of 75 MBh and a combustion efficiency of 80%. The water heater has a74-gallon storage tank and is located in the custodial closet. It is 13 years old and appears to be in good condition.

Food Service

The facility houses three (3) commercial kitchens, three (3) cafeterias, one (1) commercial deli, one (1) culinary classroom and one (1) bakery classroom. The kitchens are located in the 100- and 400-wing sections of the facility. The cooking system consists of a combination of gas and electric convection ovens. The range tops, griddles, and steamers are all gas fired. Each kitchen has a high temperature electric conveyor dishwasher. We noticed that some gas fired kitchen equipment was left on after the normal hours of operation. Overall, the kitchens are well maintained.

Refrigeration

The facility has commercial refrigeration systems which consist of nine (9) standup refrigerators, two (2) standup freezers, six (6) walk-in freezers and one (1) walk-in cooler located either in the kitchen, cafeteria or some common areas. Also, there are two (2) ice making machines located in the old and new cafeterias. The refrigeration systems appear to be in good condition with most having an ENERGY STAR® label.

Building Plug Load

The building has approximately 393 computers with LCD monitors that are used daily, plus servers, 45 large photocopiers, and 81 printers. The computers, monitors, photocopiers and printers are recent models with power management software to reduce power when they sit idle for more than a few minutes. The data center has six (6) APC power and surge protection system. The facility has four (4) vending machines all located in the corridors.

2.7 Water-Using Systems

There are several restrooms at this facility. A sampling of restrooms found that most faucets are rated for 2.2 gallons per minute (gpm) or higher, the toilets are rated at 2.5 gallons per flush (gpf) and the urinals are rated at 2 gpf. The kitchens have nine (9) faucets that are rated for 3 gpm.

3 SITE ENERGY USE AND COSTS

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

3.1 Total Cost of Energy

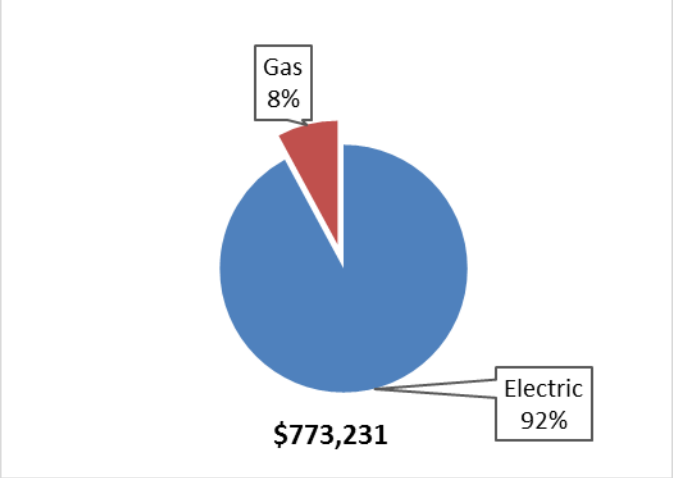
The following energy consumption and cost data is based on the last 12-month period of utility billing data that was provided for each utility. A profile of the annual energy consumption and energy cost of the facility was developed from this information.

Figure 6 - Utility Summary

ility Summary for Gloucester County Vocational Technical School Dist		
Fuel	**Usage**	**Cost**
Electricity	5,362,318 kWh	$712,238
Natural Gas	51,965 Therms	$60,993
Total		**$773,231**

The current annual energy cost for this facility is $773,231 as shown in the chart below.

Figure 7 - Energy Cost Breakdown



3.2 Electricity Usage

Electricity is provided by Atlantic City Electric. The average electric cost over the past 12 months was $0.133/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. The electricity use profile reflects high occupancy in the summer months and confirms the 12 months facility operation.

Figure 8 - Electric Usage & Demand

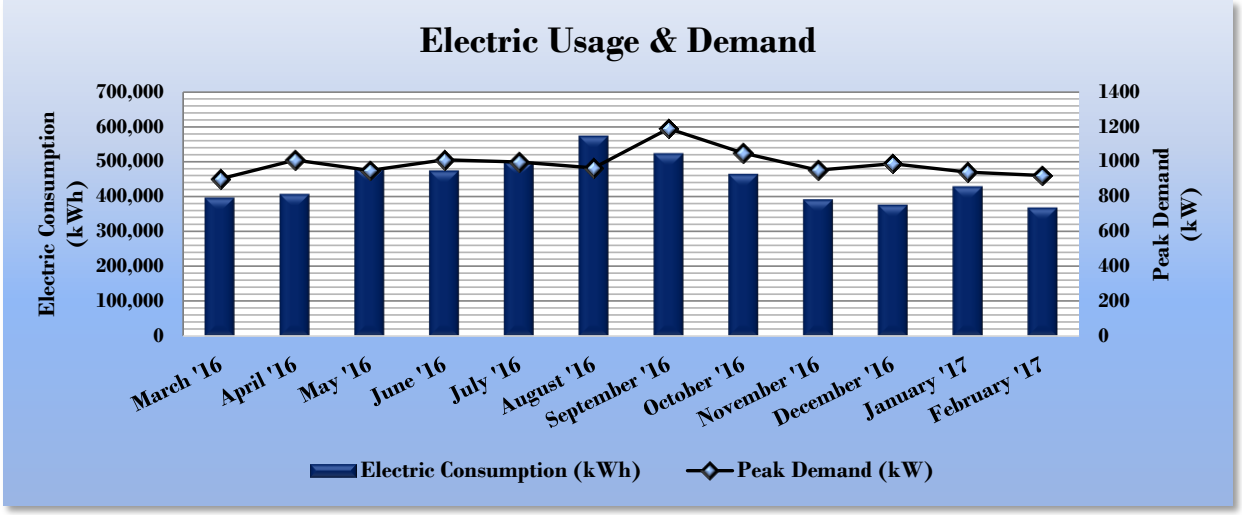


Figure 9 - Electric Usage & Demand

Electric Billing Data for Gloucester County Vocational Technical School					
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Total Electric Cost	TRC Estimated Usage?
3/30/16	31	395,368	902	$52,656	No
4/28/16	30	405,422	1,010	$53,003	No
5/30/16	31	477,189	950	$62,475	No
6/29/16	30	472,169	1,010	$61,557	No
7/28/16	31	496,602	998	$62,562	No
8/30/16	31	571,748	964	$74,483	No
9/29/16	30	521,413	1,190	$70,656	No
10/30/16	31	462,527	1,050	$62,104	No
11/29/16	30	390,259	951	$53,033	No
12/28/16	31	374,698	989	$51,473	No
1/30/17	31	427,665	940	$58,608	No
2/27/17	28	367,258	920	$49,626	No
Totals	**365**	**5,362,318**	**1190.32**	**$712,238**	0
Annual	**365**	**5,362,318**	**1190.32**	**$712,238**	

3.3 Natural Gas Usage

Natural gas is provided by South Jersey Gas. The average gas cost for the past 12 months is $1.174/therm, which is the blended rate used throughout the analyses in this report. The monthly gas consumption is shown in the chart below. The gas use profile is typical for a facility with a significant heating load relative to other end uses.

Figure 10 - Natural Gas Usage

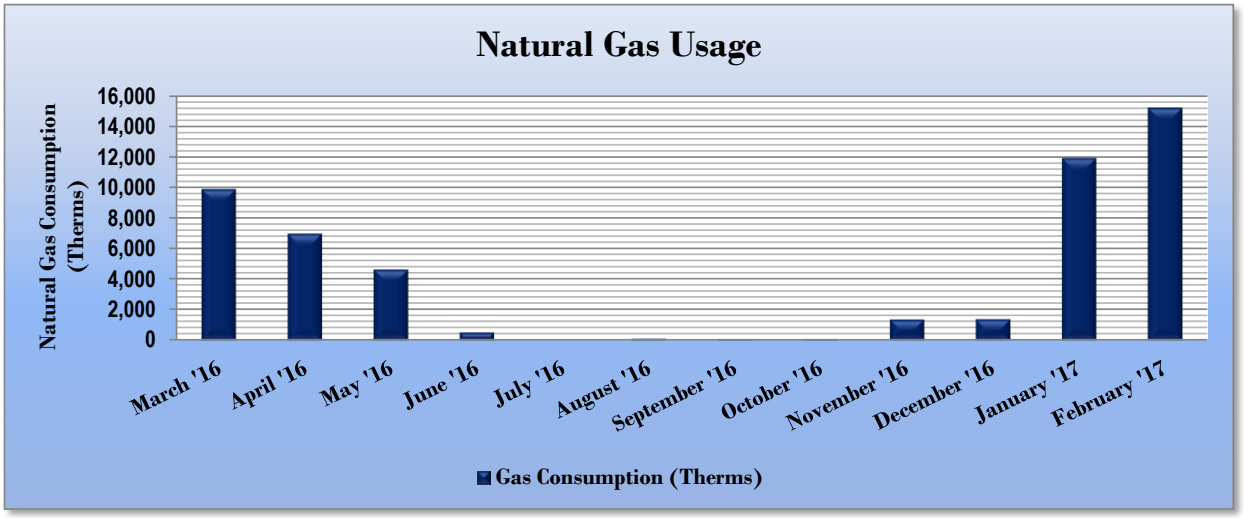


Figure 11 - Natural Gas Usage

s Billing Data for Gloucester County Vocational Technical School Distr			
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost
4/6/16	30	9,859	$10,152
5/6/16	31	6,948	$7,459
6/6/16	30	4,613	$5,405
7/8/16	31	499	$1,823
8/5/16	31	0	$1,210
9/6/16	30	96	$1,468
10/6/16	31	93	$1,424
11/7/16	30	90	$1,581
12/9/16	31	1,349	$2,694
1/5/17	31	1,372	$2,335
2/3/17	28	11,889	$11,301
3/6/17	31	15,156	$14,141
Totals	**365**	**51,965**	**$60,993**
Annual	**365**	**51,965**	**$60,993**

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 12 - Energy Use Intensity Comparison – Existing Conditions

Energy Use Intensity Comparison - Existing Conditions		
	Gloucester County Vocational Technical School District	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft^2)	161.1	141.4
Site Energy Use Intensity (kBtu/ft^2)	60.2	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 13 - Energy Use Intensity Comparison – Following Installation of Recommended Measures

Energy Use Intensity Comparison - Following Installation of Recommended Measures		
	Gloucester County Vocational Technical School District	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft^2)	108.9	141.4
Site Energy Use Intensity (kBtu/ft^2)	43.2	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. This building is not eligible to receive a score because the property type falls under vocational school type, which is currently not being rated by ENERGY STAR® score.

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

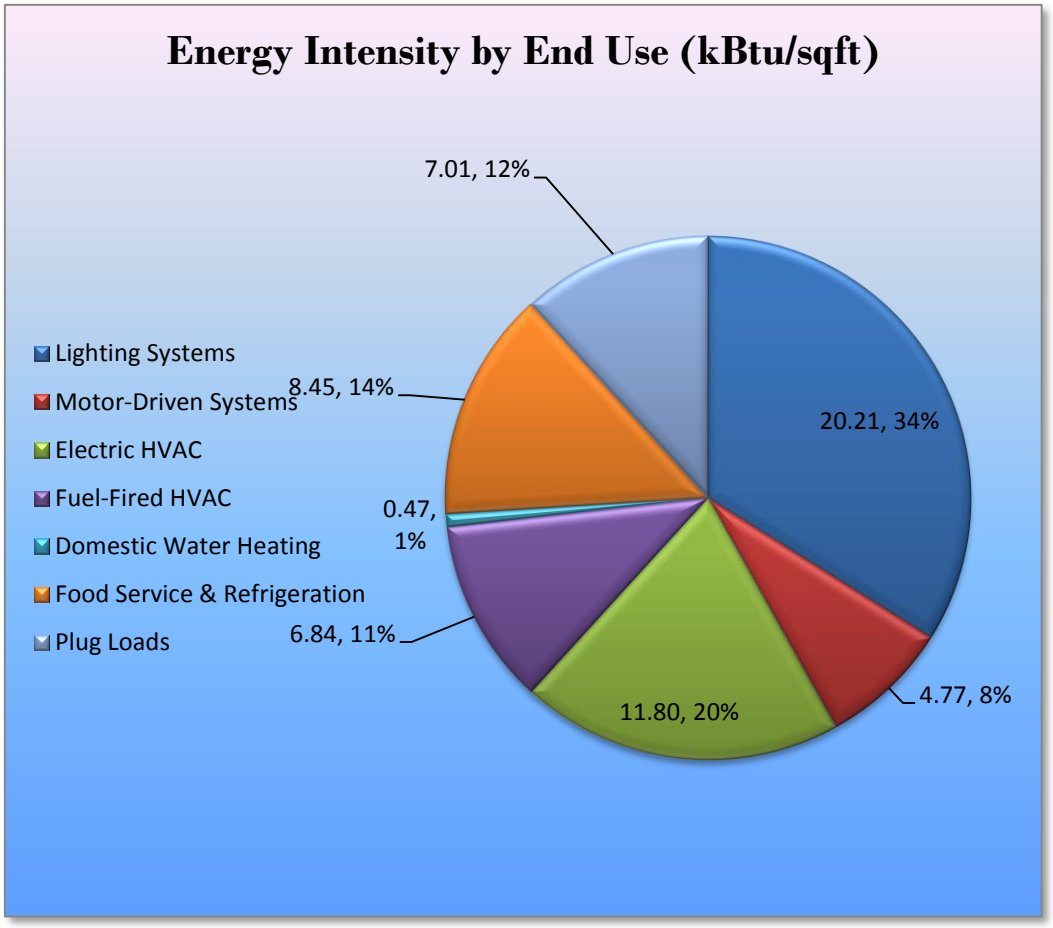
For more information on ENERGY STAR® certification go to: https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1.

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 14 - Energy Balance (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 the Gloucester County Vocational Technical School 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 P4P, 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 15 – Summary of Recommended ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**1,417,026**	**147.4**	**0.0**	**$188,213.26**	**$445,625.87**	**$63,175.00**	**$382,450.87**	**2.0**	**1,426,934**
ECM 1	Install LED Fixtures	351,966	37.2	0.0	$46,749.09	$138,898.05	$6,755.00	$132,143.05	2.8	354,427
ECM 2	Retrofit Fixtures with LED Lamps	1,053,274	109.5	0.0	$139,898.64	$285,754.60	$56,420.00	$229,334.60	1.6	1,060,638
ECM 3	Install LED Exit Signs	11,787	0.8	0.0	$1,565.53	$20,973.23	$0.00	$20,973.23	13.4	11,869
Lighting Control Measures		**316,120**	**32.7**	**0.0**	**$41,987.86**	**$87,198.00**	**$12,130.00**	**$75,068.00**	**1.8**	**318,330**
ECM 4	Install Occupancy Sensor Lighting Controls	262,634	27.1	0.0	$34,883.76	$76,198.00	$12,130.00	$64,068.00	1.8	264,470
ECM 5	Install High/Low Lighitng Controls	53,486	5.5	0.0	$7,104.09	$11,000.00	$0.00	$11,000.00	1.5	53,859
Motor Upgrades		**2,569**	**1.0**	**0.0**	**$341.23**	**$3,874.63**	**$0.00**	**$3,874.63**	**11.4**	**2,587**
ECM 6	Premium Efficiency Motors	2,569	1.0	0.0	$341.23	$3,874.63	$0.00	$3,874.63	11.4	2,587
Variable Frequency Drive (VFD) Measures		**22,100**	**6.8**	**124.3**	**$4,394.85**	**$14,297.40**	**$3,000.00**	**$11,297.40**	**2.6**	**36,813**
ECM 7	Install VFDs on Constant Volume (CV) HVAC	13,563	6.8	0.0	$1,801.53	$11,021.55	$2,000.00	$9,021.55	5.0	13,658
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	8,536	0.0	124.3	$2,593.31	$3,275.85	$1,000.00	$2,275.85	0.9	23,155
HVAC System Improvements		**121,110**	**27.3**	**0.0**	**$16,086.13**	**$38,350.00**	**$15,250.00**	**$23,100.00**	**1.4**	**121,957**
ECM 9	Install Dual Enthalpy Outside Economizer Control	121,110	27.3	0.0	$16,086.13	$38,350.00	$15,250.00	$23,100.00	1.4	121,957
Domestic Water Heating Upgrade		**0**	**0.0**	**47.4**	**$555.96**	**$215.10**	**$0.00**	**$215.10**	**0.4**	**5,546**
ECM 10	Install Low-Flow Domestic Hot Water Devices	0	0.0	47.4	$555.96	$215.10	$0.00	$215.10	0.4	5,546
Plug Load Equipment Control - Vending Machine		**6,447**	**0.0**	**0.0**	**$856.36**	**$920.00**	**$0.00**	**$920.00**	**1.1**	**6,492**
ECM 11	Vending Machine Control	6,447	0.0	0.0	$856.36	$920.00	$0.00	$920.00	1.1	6,492
TOTALS		**1,885,372**	**215.2**	**171.7**	**$252,435.64**	**$590,481.00**	**$93,555.00**	**$496,926.00**	**2.0**	**1,918,660**

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

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

4.1.1 Lighting Upgrades

Recommended upgrades to existing lighting fixtures are summarized in Figure 16 below.

Figure 16 – Summary of Lighting Upgrade ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**1,417,026**	**147.4**	**0.0**	**$188,213.26**	**$445,625.87**	**$63,175.00**	**$382,450.87**	**2.0**	**1,426,934**
ECM 1	Install LED Fixtures	351,966	37.2	0.0	$46,749.09	$138,898.05	$6,755.00	$132,143.05	2.8	354,427
ECM 2	Retrofit Fixtures with LED Lamps	1,053,274	109.5	0.0	$139,898.64	$285,754.60	$56,420.00	$229,334.60	1.6	1,060,638
ECM 3	Install LED Exit Signs	11,787	0.8	0.0	$1,565.53	$20,973.23	$0.00	$20,973.23	13.4	11,869

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	323,336	33.4	0.0	$42,946.34	$116,238.78	$955.00	$115,283.78	2.7	325,597
Exterior	28,630	3.7	0.0	$3,802.75	$22,659.27	$5,800.00	$16,859.27	4.4	28,830

Measure Description

We recommend replacing existing fixtures containing metal halide 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.

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	1,053,274	109.5	0.0	$139,898.64	$285,754.60	$56,420.00	$229,334.60	1.6	1,060,638
Exterior	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.0	0

Measure Description

We recommend retrofitting existing linear fluorescent T5, T8, incandescent, compact 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 a fluorescent tube and more than ten (10) times longer than many incandescent lamps.

ECM 3: Install LED Exit Signs

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	11,787	0.8	0.0	$1,565.53	$20,973.23	$0.00	$20,973.23	13.4	11,869
Exterior	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.0	0

Measure Description

We recommend replacing all compact fluorescent exit signs with LED exit signs. LED exit signs require virtually no maintenance and have a life expectancy of at least 20 years. This measure saves energy by installing LED fixtures, which use less power than other technologies with an equivalent lighting output.

4.1.2 Lighting Control Measures

Figure 17 – 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		**316,120**	**32.7**	**0.0**	**$41,987.86**	**$87,198.00**	**$12,130.00**	**$75,068.00**	**1.8**	**318,330**
ECM 4	Install Occupancy Sensor Lighting Controls	262,634	27.1	0.0	$34,883.76	$76,198.00	$12,130.00	$64,068.00	1.8	264,470
ECM 5	Install High/Low Lighitng Controls	53,486	5.5	0.0	$7,104.09	$11,000.00	$0.00	$11,000.00	1.5	53,859

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

ECM 4: Install Occupancy Sensor Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
262,634	27.1	0.0	$34,883.76	$76,198.00	$12,130.00	$64,068.00	1.8	264,470

Measure Description

We recommend installing occupancy sensors to control lighting fixtures that are currently controlled by manual switches in restrooms, classrooms, storage rooms, conference rooms and administrative offices. 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 easily be over-ridden by room occupants to allow them to manually turn fixtures on or off, as desired. Energy savings results from only operating lighting systems when they are required.

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

ECM 5: Install High/Low Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
53,486	5.5	0.0	$7,104.09	$11,000.00	$0.00	$11,000.00	1.5	53,859

Measure Description

We recommend installing occupancy sensors to provide dual level lighting control for lighting fixtures in spaces that are infrequently occupied but may require some level of continuous lighting for safety or security reasons. Typical areas for such lighting control are 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. Energy savings result 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

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual N/A Savings (MMBtu)	Annual N/A Savings (MMBtu)	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		**2,569**	**1.0**	**0.0**	**0.0**	**0.0**	**0.0**	**$341.23**	**$3,874.63**	**$0.00**	**$3,874.63**	**11.4**	**2,587**
ECM 6	Premium Efficiency Motors	2,569	1.0	0.0	0.0	0.0	0.0	$341.23	$3,874.63	$0.00	$3,874.63	11.4	2,587

ECM 6 Premium Efficiency Motors

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
2,569	1.0	0.0	$341.23	$3,874.63	$0.00	$3,874.63	11.4	2,587

Measure Description

We recommend replacing standard efficiency of the one (1) 7.5 hp auto shop and the two (2) 7.5 hp pool air handler's motors with *NEMA Premium™* efficiency motors. Our evaluation assumes that existing motors will be replaced with motors of equivalent size and type. Although occasionally additional savings can be achieved by downsizing motors to better meet the motor's current load requirements. The base case motor efficiencies are estimated from nameplate information and our best estimates of motor run hours. Efficiencies of proposed motor upgrades are obtained from *New Jersey's Clean Energy Program Protocols to Measure Resource Savings (2016)*. Savings are based on the difference between baseline and proposed efficiencies and the assumed annual operating hours.

4.1.4 Variable Frequency Drive Measures

Our recommendations for variable frequency drive (VFD) measures are summarized in Figure 18 below.

Figure 18 – 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		**22,100**	**6.8**	**124.3**	**$4,394.85**	**$14,297.40**	**$3,000.00**	**$11,297.40**	**2.6**	**36,813**
ECM 7	Install VFDs on Constant Volume (CV) HVAC	13,563	6.8	0.0	$1,801.53	$11,021.55	$2,000.00	$9,021.55	5.0	13,658
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	8,536	0.0	124.3	$2,593.31	$3,275.85	$1,000.00	$2,275.85	0.9	23,155

ECM 7: 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)
13,563	6.8	0.0	$1,801.53	$11,021.55	$2,000.00	$9,021.55	5.0	13,658

Measure Description

We recommend installing variable frequency drives (VFDs) on the one (1) 7.5 hp auto shop and the two (2) 7.5 pool air handler's supply fan motors speed to convert a constant-volume, single-zone air handling system into a variable-air-volume (VAV) system. 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 result 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.

ECM 8: Install VFDs on Kitchen Hood Fan 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)
8,536	0.0	124.3	$2,593.31	$3,275.85	$1,000.00	$2,275.85	0.9	23,155

Measure Description

We recommend installing variable frequency drive (VFDs) and sensors to control the 5 hp kitchen hood fan motor. The air flow of the hood is varied based on two (2) key inputs: temperature and smoke/cooking fumes. The VFD controls the amount of exhaust (and kitchen make-up air) based on temperature—the lower the temperature, the lower the flow. If the optic sensor is triggered by smoke or cooking fumes, the speed of the fan ramps up to 100%. The magnitude of energy savings is based on the estimated amount of time that the system will operate at partial load.

4.1.5 HVAC System Upgrades

Our recommendation for HVAC system improvement are summarized in Figure 19 below.

Figure 19 - 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		**121,110**	**27.3**	**0.0**	**$16,086.13**	**$38,350.00**	**$15,250.00**	**$23,100.00**	**1.4**	**121,957**
ECM 9	Install Dual Enthalpy Outside Economizer Control	121,110	27.3	0.0	$16,086.13	$38,350.00	$15,250.00	$23,100.00	1.4	121,957

ECM 9: Install Dual-Enthalpy Economizers

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)
121,110	27.3	0.0	$16,086.13	$38,350.00	$15,250.00	$23,100.00	1.4	121,957

Measure Description

We recommend installing dual enthalpy economizers to the packaged ACs being considered for replacement to control a ventilation system's outside air intake in order to reduce a facility's total cooling load. A dual-enthalpy economizer monitors the air temperature and humidity of both the outside and return air. The control supplies the lowest energy (temperature and humidity) air to the air handling system. When outside air conditions allow, outside air can be used for cooling instead of running the air handling system's compressor. This reduces the demand on the cooling system, lowering its usage hours and saving energy.

Savings result from using outside air instead of mechanical cooling when outside air conditions permit.

4.1.6 Domestic Hot Water Heating System Upgrades

Our recommendations for domestic water heating system improvements are summarized in Figure 20 below.

Figure 20 - 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**	**47.4**	**$555.96**	**$215.10**	**$0.00**	**$215.10**	**0.4**	**5,546**
ECM 10	Install Low-Flow Domestic Hot Water Devices	0	0.0	47.4	$555.96	$215.10	$0.00	$215.10	0.4	5,546

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	47.4	$555.96	$215.10	$0.00	$215.10	0.4	5,546

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 can reduce hot water usage, relative to standard aerators, which saves energy.

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

4.1.7 Plug Load Equipment Control - Vending Machines

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	*Annual Natural Gas Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	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		**6,447**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**$856.36**	**$920.00**	**$0.00**	**$920.00**	**1.1**	**6,492**
ECM 11	Vending Machine Control	6,447	0.0	0.0	0.0	0.0	0.0	$856.36	$920.00	$0.00	$920.00	1.1	6,492

ECM 11: 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)
6,447	0.0	0.0	$856.36	$920.00	$0.00	$920.00	1.1	6,492

Measure Description

Vending machines operate continuously, even during non-business hours. It is recommended that occupancy sensor controls be installed 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 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 21 – 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)
Variable Frequency Drive (VFD) Measures	**4,793**	**1.3**	**0.0**	**$636.68**	**$11,473.01**	**$0.00**	**$11,473.01**	**18.0**	**4,827**
Install VFDs on Hot Water Pumps	4,793	1.3	0.0	$636.68	$11,473.01	$0.00	$11,473.01	18.0	4,827
Electric Unitary HVAC Measures	**190,068**	**112.6**	**0.0**	**$25,245.32**	**$918,604.50**	**$31,429.64**	**$887,174.86**	**35.1**	**191,397**
Install High Efficiency Electric AC	190,068	112.6	0.0	$25,245.32	$918,604.50	$31,429.64	$887,174.86	35.1	191,397
Gas Heating (HVAC/Process) Replacement	**0**	**0.0**	**123.3**	**$1,447.14**	**$137,410.09**	**$11,914.40**	**$125,495.69**	**86.7**	**14,436**
Install High Efficiency Hot Water Boilers	0	0.0	66.6	$781.17	$58,291.13	$6,714.40	$51,576.73	66.0	7,793
Install High Efficiency Furnaces	0	0.0	56.7	$665.97	$79,118.95	$5,200.00	$73,918.95	111.0	6,643
TOTALS	**194,861**	**113.9**	**123.3**	**$27,329.14**	**$1,067,487.59**	**$43,344.04**	**$1,024,143.55**	**37.5**	**210,660**

* - 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 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)
4,793	1.3	0.0	$636.68	$11,473.01	$0.00	$11,473.01	18.0	4,827

Measure Description

We evaluated installing variable frequency drives (VFD) to control the two (2) 3 hp and the two (2) 2 hp hot water pumps serving the theater and the 500-wing of the facility. This measure requires that a majority of the hot water coils be served by two (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 result 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.

Reasons for not Recommending

The simple payback of this measure exceeds the expected useful life of the equipment and is therefore not recommended based on energy savings alone.

Install High Efficiency Air Conditioning Units

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)
190,068	112.6	0.0	$25,245.32	$918,604.50	$31,429.64	$887,174.86	35.1	191,397

Measure Description

We recommend replacing standard efficiency packaged, split system and window air conditioning units that are near or have passed their useful service life with high efficiency packaged, split system and window air conditioning units. There have been significant improvements in both compressor and fan motor efficiencies over the past several years. Therefore, electricity savings can be achieved by replacing older units with new high efficiency units. A higher EER or SEER rating indicates a more efficient cooling system. The magnitude of energy savings for this measure depends on the relative efficiency of the older unit versus the new high efficiency unit, the average cooling load, and the estimated annual operating hours.

Reasons for not Recommending

The simple payback of this measure exceeds the expected useful life of the equipment and is therefore not recommended based on energy savings alone. This does not prevent the school for considering the implementation of this measure as most units are in need of replacement.

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	66.6	$781.17	$58,291.13	$6,714.40	$51,576.73	66.0	7,793

Measure Description

We evaluated replacing the two (2) older inefficient hot water boilers serving the 500-wing 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 recommended for this site.

Reasons for not Recommending

The simple payback of this measure exceeds the expected useful life of the equipment and is therefore not recommended based on energy savings alone.

Install High Efficiency Furnaces

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
0	0.0	56.7	$665.97	$79,118.95	$5,200.00	$73,918.95	111.0	6,643

Measure Description

We recommend replacing existing standard efficiency gas fired furnaces of the packaged ACs with condensing furnaces. Improved combustion technology and heat exchanger design optimize heat recovery from the combustion gases which can significantly improve furnace efficiency. Savings result from improved system efficiency. The gas fired furnaces mentioned in this measure represent the heating component of the packaged units.

Reasons for not Recommending

The simple payback of this measure exceeds the expected useful life of the equipment and is therefore not recommended based on energy savings alone.

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.

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.

Reduce Motor Short Cycling

Frequent stopping and starting of motors subjects rotors and other parts to substantial stress. This can result in component wear, reducing efficiency, and increasing maintenance costs. Adjust the load on the motor to limit the amount of unnecessary stopping and starting to improve motor performance.

Perform Routine Motor Maintenance

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

Use Fans to Reduce Cooling Load

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

Practice Proper Use of Thermostat Schedules and Temperature Resets

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

Ensure Economizers are Functioning Properly

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

Clean Evaporator/Condenser Coils on AC Systems

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

Clean and/or Replace HVAC Filters

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

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 Maintenance on Compressed Air Systems

Like all electro-mechanical equipment, compressed air systems require periodic maintenance to operate at peak efficiency. A maintenance plan should be developed for process related compressed air systems to include inspection, cleaning, and replacement of inlet filter cartridges, cleaning of drain traps, daily inspection of lubricant levels to reduce unwanted friction, inspection of belt condition and tension, checking for system leaks and adjustment of loose connections, and overall system cleaning. Contact a qualified technician for help with setting up periodic maintenance schedule.

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.

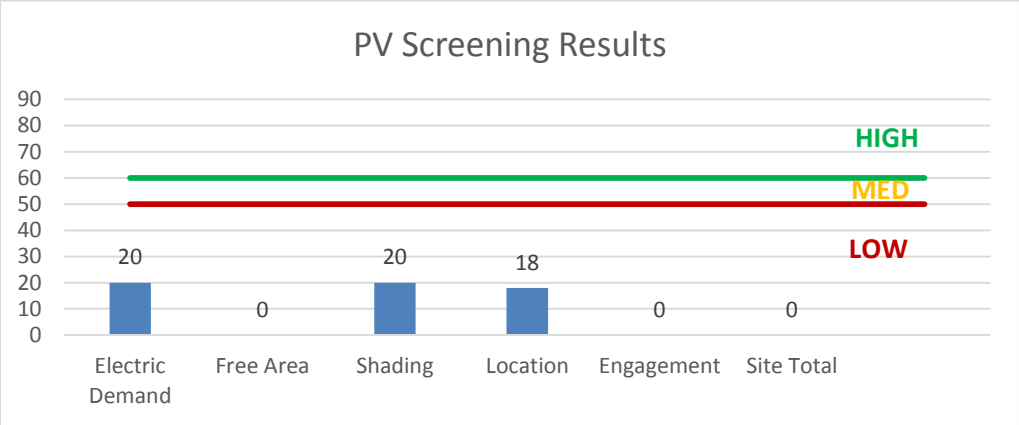
Preliminary screenings were performed to determine the potential that a generation project could provide a cost-effective solution for your facility. Before making a decision to implement, a feasibility study should be conducted that would take a detailed look at existing energy profiles, siting, interconnection, 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 current 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.

As noted in Section 2.5, the facility has two (2) 260 kW photovoltaic (PV) arrays installed on the roofs. The PV arrays systems provide approximately 46% of the electricity required by the facility. As a result, there are not enough free spaces for additional solar PV arrays installation.

Figure 22 - Photovoltaic Screening



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

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

6.2 Combined Heat and Power

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

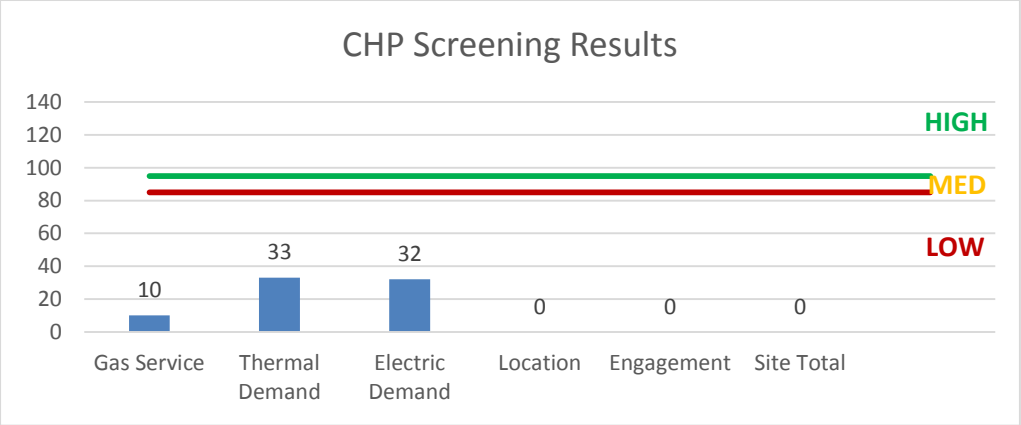
CHP systems are typically used to produce a portion of the electric power used onsite by a facility, with the balance of electric power needs supplied by grid purchases. The heat is used to supplement (or supplant) existing boilers for the purpose of space heating and/or domestic hot water heating. Waste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

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

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

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

Figure 23 - Combined Heat and Power Screening



7 DEMAND RESPONSE

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

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

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

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

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

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

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

In our opinion, the facility appears to be a good candidate for DR curtailment.

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 24 for a list of the eligible programs identified for each recommended ECM.

Figure 24 - ECM Incentive Program Eligibility

Energy Conservation Measure		SmartStart Prescriptive	SmartStart Custom	Direct Install	Pay For Performance Existing Buildings	Large Energy Users Program	Combined Heat & Power and Fuel Cell
ECM 1	Install LED Fixtures	x			x		
ECM 2	Retrofit Fixtures with LED Lamps	x			x		
ECM 3	Install LED Exit Signs				x		
ECM 4	Install Occupancy Sensor Lighting Controls	x			x		
ECM 5	Install High/Low Lighitng Controls				x		
ECM 6	Premium Efficiency Motors				x		
ECM 7	Install VFDs on Constant Volume (CV) HVAC	x			x		
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	x			x		
ECM 9	Install Dual Enthalpy Outside Economizer Control	x			x		
ECM 10	Install Low-Flow Domestic Hot Water Devices				x		
ECM 11	Vending Machine Control				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 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 SS 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 (1) 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 (2) 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 (1) 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 (1) year after the installation. At each of these three (3) 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 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
New 200 Wing Boiler Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.17	1,673	0.0	$222.27	$468.00	$80.00	1.75
300 Wing Boiler Room	7	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	No	7	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.28	2,751	0.0	$365.40	$665.93	$140.00	1.44
300 Wing Boiler Room	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	5,512	Fixture Replacement	No	6	LED - Fixtures: Downlight Pendant	Wall Switch	164	5,512	1.16	11,182	0.0	$1,485.18	$3,651.48	$30.00	2.44
Storage Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Old Warehouse	19	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	19	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.52	5,022	0.0	$667.07	$1,343.50	$230.00	1.67
Old Warehouse	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Office	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.16	1,586	0.0	$210.65	$467.00	$80.00	1.84
Storage Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.08	793	0.0	$105.33	$291.50	$50.00	2.29
500 Wing Corridor	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	0.10	931	0.0	$123.60	$390.27	$40.00	2.83
Pump Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.07	710	0.0	$94.30	$190.27	$40.00	1.59
500 Wing Boiler Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	8	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.29	2,840	0.0	$377.19	$761.07	$160.00	1.59
Room 635	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
New Warehouse	28	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.77	7,401	0.0	$983.05	$1,986.00	$340.00	1.67
New Warehouse Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
New Warehouse Restrooms	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.08	793	0.0	$105.33	$445.50	$65.00	3.61
Copy Center	20	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.55	5,287	0.0	$702.18	$1,402.00	$240.00	1.65
400 Wing Corridor	28	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	28	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.35	13,028	0.0	$1,730.35	$3,263.73	$560.00	1.56
400 Wing Corridor	12	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	12	LED Exit Signs: 2 W Lamp	None	6	8,760	0.05	725	0.0	$96.34	$1,290.66	$0.00	13.40
400 Wing Corridor	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,858	0.22	2,115	0.0	$280.87	$668.00	$80.00	2.09
400 Wing Corridor	12	Metal Halide: (1) 175W Lamp	Wall Switch	215	5,512	Fixture Replacement	Yes	12	LED - Fixtures: Downlight Pendant	Occupancy Sensor	52	3,858	1.40	13,585	0.0	$1,804.44	$9,942.96	$480.00	5.24
400 Wing Corridor	6	Metal Halide: (1) 150W Lamp	Wall Switch	190	5,512	Fixture Replacement	Yes	6	LED - Fixtures: Downlight Pendant	Occupancy Sensor	45	3,858	0.62	6,028	0.0	$800.68	$4,971.48	$240.00	5.91
400 Wing Corridor	4	Incandescent: Srew-in 40 W	Wall Switch	40	5,512	Relamp	No	4	LED Screw-In Lamps: LED Lamp	Wall Switch	7	5,512	0.09	837	0.0	$111.14	$215.01	$20.00	1.75
400 Wing Corridor	1	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	393	0.0	$52.20	$95.13	$20.00	1.44

	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
Room 437 - Kitchen	17	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	17	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.62	6,035	0.0	$801.52	$1,617.27	$340.00	1.59
Room 437B - Kitchen	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	9	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.33	3,195	0.0	$424.34	$856.20	$180.00	1.59
Room 437 - Kitchen	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Kitchen Hood	6	Compact Fluorescent: Srew-in 23 W	Wall Switch	23	5,512	Relamp	No	6	LED Screw-In Lamps: LED Lamp	Wall Switch	15	5,512	0.03	304	0.0	$40.41	$322.52	$0.00	7.98
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Diswasher Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
400 Wing Old Kitchen	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
400 Wing Old Kitchen	18	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	18	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.66	6,390	0.0	$848.67	$1,712.40	$360.00	1.59
400 Wing Old Kitchen	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Kitchen Hood	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	5	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.11	1,046	0.0	$138.92	$292.50	$50.00	1.75
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Womens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
400 Wing Cafeteria	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.08	793	0.0	$105.33	$445.50	$65.00	3.61
500 Wing Corridor	85	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	85	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	4.09	39,548	0.0	$5,252.84	$9,686.33	$1,700.00	1.52
Male Dressing Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.08	793	0.0	$105.33	$985.50	$135.00	8.07
Women Dressing	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.06	539	0.0	$71.56	$58.50	$10.00	0.68
Women Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
500 Wing Custodial	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Air Handler Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Dectron Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	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
400 Common Area	23	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	23	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.84	8,164	0.0	$1,084.41	$2,188.07	$460.00	1.59
400 Common Area	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
400 Wing New Cafeteria	33	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	33	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.59	15,354	0.0	$2,039.34	$3,487.40	$720.00	1.36
400 Wing New Cafeteria	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
500 Wing Corridor	11	Compact Fluorescent: 2x13 W 4 -PIN	Wall Switch	26	5,512	Relamp	Yes	11	LED - Fixtures: Downlight Solid State Retrofit	High/Low Control	18	3,858	0.10	934	0.0	$124.10	$790.15	$0.00	6.37
500 Wing Corridor	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,512	0.02	184	0.0	$24.42	$63.20	$0.00	2.59
500 Wing Corridor	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	5,512	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	5,512	0.02	222	0.0	$29.47	$71.80	$10.00	2.10
500 Wing Corridor	27	Compact Fluorescent: 18 W 2 PIN	Wall Switch	18	5,512	Relamp	Yes	27	LED - Fixtures: Downlight Solid State Retrofit	High/Low Control	11	3,858	0.18	1,763	0.0	$234.14	$2,048.55	$0.00	8.75
500 Wing Corridor	29	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	29	LED Exit Signs: 2 W Lamp	None	6	8,760	0.11	1,753	0.0	$232.82	$3,119.10	$0.00	13.40
500 Wing Entrance	3	Metal Halide: (1) 175W Lamp	Wall Switch	215	5,512	Fixture Replacement	Yes	3	LED - Fixtures: Downlight Pendant	Occupancy Sensor	52	3,858	0.35	3,396	0.0	$451.11	$2,485.74	$120.00	5.24
600 Wing 1st Floor Corridor	19	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	19	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	0.91	8,840	0.0	$1,174.16	$2,007.53	$380.00	1.39
Main Entrance	7	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	7	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,858	0.18	1,726	0.0	$229.26	$642.40	$0.00	2.80
600 Wing 1st Floor Corridor	7	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	7	LED Exit Signs: 2 W Lamp	None	6	8,760	0.03	423	0.0	$56.20	$752.89	$0.00	13.40
Main Entrance	1	Compact Fluorescent: 2x13 W 4 -PIN	Wall Switch	26	5,512	Relamp	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	18	5,512	0.01	51	0.0	$6.74	$53.65	$0.00	7.97
Room 600A	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 601	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 602	14	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	14	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.67	6,514	0.0	$865.17	$1,447.87	$300.00	1.33
Room 602	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 603	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 603	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Teacher Center	13	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	13	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.63	6,048	0.0	$803.38	$1,352.73	$280.00	1.34
Teacher Center	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 608 Conference Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Room 605	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 606	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99

	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
Room 610	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 610	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$460.27	$75.00	3.12
Women Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$460.27	$75.00	3.12
Room 611	5	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.24	2,326	0.0	$308.99	$591.67	$120.00	1.53
Room 618	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Room 616	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 616A	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 617	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 619	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Room 618	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
600 Wing 2nd Floor Main Lobby	6	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) U-Lamp	High/Low Control	33	3,858	0.15	1,479	0.0	$196.51	$579.20	$0.00	2.95
600 Wing 2nd Floor Stair	6	Compact Fluorescent: 18 W 2 PIN	Wall Switch	18	5,512	Relamp	No	6	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	11	5,512	0.03	266	0.0	$35.36	$321.90	$0.00	9.10
600 Wing 2nd Floor Main Lobby	29	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	29	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,858	0.79	7,666	0.0	$1,018.15	$2,296.50	$290.00	1.97
600 Wing 2nd Floor Corridor	17	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	17	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	0.82	7,910	0.0	$1,050.57	$2,017.27	$340.00	1.60
600 Wing 2nd Floor Corridor	6	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	6	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	363	0.0	$48.17	$645.33	$0.00	13.40
Room 625	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 626	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 627	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 628	14	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	14	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.67	6,514	0.0	$865.17	$1,447.87	$300.00	1.33
Room 628	4	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	4	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	242	0.0	$32.11	$430.22	$0.00	13.40
Room 629	5	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.24	2,326	0.0	$308.99	$591.67	$120.00	1.53
Room 630	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 631	7	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	7	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.34	3,257	0.0	$432.59	$781.93	$160.00	1.44
Room 632	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99

	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
Room 633	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 634	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 645	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$460.27	$75.00	3.12
Women Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$460.27	$75.00	3.12
Room 631	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
1200 Wing Stair	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	0.19	1,861	0.0	$247.19	$580.53	$80.00	2.02
1200 Wing Stair	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 641	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Room 639	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 640	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Stairwell	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	0.14	1,396	0.0	$185.39	$485.40	$60.00	2.29
Room 641	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 638	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Room 614	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Stairwell	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
400 Wing Corridor	22	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	22	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.06	10,236	0.0	$1,359.56	$2,292.93	$440.00	1.36
400 Wing Corridor	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
1200 Wing Corridor	37	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	37	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.78	17,215	0.0	$2,286.53	$3,719.93	$740.00	1.30
Room 1124	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 1110	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Room 1109	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	3,858	Relamp	No	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.44	2,982	0.0	$396.05	$1,141.60	$240.00	2.28
Room 1109	13	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,858	Relamp	No	13	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.28	1,904	0.0	$252.83	$760.50	$130.00	2.49
Room 1110	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 1109	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
1100 Wing Corridor	22	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	22	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.06	10,236	0.0	$1,359.56	$2,492.93	$440.00	1.51
1100 Wing Corridor	4	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	4	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	242	0.0	$32.11	$430.22	$0.00	13.40
Room 1103	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1120	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1119	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1101	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1102	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1118	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1104	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1116	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,858	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.13	879	0.0	$116.69	$351.00	$60.00	2.49
Mens Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 1114	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	3,858	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.04	293	0.0	$38.90	$117.00	$20.00	2.49
Boys Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$460.27	$75.00	3.12
Girls Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Women Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 1107	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Stairwell A	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Stairwell A	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 1105	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1106	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1210	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	3,858	Relamp	No	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.11	745	0.0	$99.01	$285.40	$60.00	2.28
Room 1209	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1207	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1211	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1212	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	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
Room 1213	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Girls Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 1215	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 1206	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1205	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Women Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Mens Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Boys Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Room 1220	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 1221	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 1204	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1203	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1222	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 1202	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	3,858	Relamp	No	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.33	2,236	0.0	$297.04	$856.20	$180.00	2.28
Room 1201	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	3,858	Relamp	No	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.33	2,236	0.0	$297.04	$856.20	$180.00	2.28
Room 1223	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	3,858	Relamp	No	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.33	2,236	0.0	$297.04	$856.20	$180.00	2.28
Room 1224	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	114	3,858	Relamp	No	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.33	2,236	0.0	$297.04	$856.20	$180.00	2.28
300 Wing Corridor	32	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	32	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,858	0.87	8,458	0.0	$1,123.48	$2,472.00	$320.00	1.92
300 Wing Corridor	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
New 200 Wing Corridor	39	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	39	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.88	18,145	0.0	$2,410.13	$4,510.20	$780.00	1.55
New 200 Wing Corridor	6	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	6	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	363	0.0	$48.17	$645.33	$0.00	13.40
Old 200 Wing Corridor	23	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	23	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.11	10,701	0.0	$1,421.36	$2,588.07	$460.00	1.50
Old 200 Wing Corridor	5	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	5	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	302	0.0	$40.14	$537.78	$0.00	13.40
Bridge 200-300-1200 Wings	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	17	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,858	0.46	4,494	0.0	$596.85	$1,394.50	$170.00	2.05
Bridge 200-300-1200 Wings	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Room 1117	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Old 100 Wing common Area	47	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	47	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	2.26	21,868	0.0	$2,904.51	$5,271.27	$940.00	1.49
Old 100 Wing common Area	4	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	4	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	242	0.0	$32.11	$430.22	$0.00	13.40
100 Wing Electrical Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,858	0.11	1,057	0.0	$140.44	$434.00	$40.00	2.81
Custodian	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Old 100 Wing Corridor	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	3,858	0.16	1,586	0.0	$210.65	$551.00	$60.00	2.33
Old 100 Wing Corridor	51	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	51	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	2.45	23,729	0.0	$3,151.71	$5,851.80	$1,020.00	1.53
Old 100 Wing Corridor	8	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	8	LED Exit Signs: 2 W Lamp	None	6	8,760	0.03	484	0.0	$64.23	$860.44	$0.00	13.40
New 100 Wing Corridor	22	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	22	LED - Linear Tubes: (4) 4' Lamps	High/Low Control	58	3,858	1.06	10,236	0.0	$1,359.56	$2,492.93	$440.00	1.51
New 100 Wing Corridor	5	Exit Signs: LED - 2 W Lamp	None	12	8,760	Fixture Replacement	No	5	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	302	0.0	$40.14	$537.78	$0.00	13.40
Room 157	22	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	22	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.60	5,815	0.0	$772.39	$1,519.00	$260.00	1.63
Room 157	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 156	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 158	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Sensory Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Room 155	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 153	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 154	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 160	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 161	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Boys Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Mens Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 152	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Room 151	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Women Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59

	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
Girls Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Rom 166	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Rom 107	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.77	7,444	0.0	$988.77	$1,754.13	$360.00	1.41
Rom 107	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Rom 106 - Cosmetic	23	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	23	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.11	10,701	0.0	$1,421.36	$2,420.07	$500.00	1.35
Rom 106	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Rom 106A	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 110	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Room 110	2	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	5,512	0.04	368	0.0	$48.83	$126.40	$0.00	2.59
Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	5,512	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	5,512	0.01	101	0.0	$13.47	$48.20	$10.00	2.84
Room 105 - Cosmetic	25	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	25	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.20	11,632	0.0	$1,544.95	$2,610.33	$540.00	1.34
Room 105B	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Offices	26	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	26	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.25	12,097	0.0	$1,606.75	$2,705.47	$560.00	1.34
Offices	7	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	7	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,858	0.18	1,726	0.0	$229.26	$558.40	$20.00	2.35
Restroom	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	5,512	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	5,512	0.02	203	0.0	$26.94	$96.40	$20.00	2.84
Kim Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Conference Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Break Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Offices	11	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	11	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.53	5,118	0.0	$679.78	$1,162.47	$240.00	1.36
Room 104	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Youth Services	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Ruiz Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Hasko Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99

	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
Mulvenna Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Storage Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
100 Wing Cafeteria	14	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	14	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.67	6,514	0.0	$865.17	$1,447.87	$300.00	1.33
Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	5,512	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	5,512	0.01	101	0.0	$13.47	$48.20	$10.00	2.84
Storage Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
100 Wing Kitchen	29	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	29	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	1.06	10,294	0.0	$1,367.30	$2,758.87	$580.00	1.59
Kitchen Hood	12	Compact Fluorescent: Screw-in 23 W	Wall Switch	23	5,512	Relamp	No	12	LED Screw-In Lamps: LED Lamp	Wall Switch	15	5,512	0.06	609	0.0	$80.83	$645.04	$60.00	7.24
Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Restroom	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	5,512	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	5,512	0.02	203	0.0	$26.94	$96.40	$20.00	2.84
Room R119	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Mechanical Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Women Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.08	793	0.0	$105.33	$291.50	$50.00	2.29
Room 108	24	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	24	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.25	12,079	0.0	$1,604.39	$2,399.20	$500.00	1.18
Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Storage Room	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.27	2,643	0.0	$351.09	$701.00	$120.00	1.65
Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 109	24	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	24	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.25	12,079	0.0	$1,604.39	$2,515.20	$520.00	1.24
Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 118	30	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	30	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.44	13,958	0.0	$1,853.94	$3,202.00	$660.00	1.37
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75

	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
Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Kitchen	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.09	837	0.0	$111.14	$234.00	$40.00	1.75
Room 118	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 118	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Kitchen Hood	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 117	16	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.83	8,053	0.0	$1,069.60	$1,754.13	$360.00	1.30
Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 110	18	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	18	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.94	9,059	0.0	$1,203.30	$1,944.40	$400.00	1.28
Room 110	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Storage Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Restroom	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 111 Office	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Paint Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.22	2,115	0.0	$280.87	$584.00	$100.00	1.72
Paint Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Paint Room	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
Room 116	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Room 115	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 115	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Mens Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Room 114	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Women Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48

	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
Room 112	10	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.48	4,653	0.0	$617.98	$1,067.33	$220.00	1.37
Room 113	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Electrical Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 112	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 213	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Mens Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	5,512	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	5,512	0.01	101	0.0	$13.47	$48.20	$10.00	2.84
Room 220	17	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	17	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.82	7,910	0.0	$1,050.57	$1,849.27	$380.00	1.40
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 200 Media Center	59	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	59	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	2.84	27,451	0.0	$3,646.09	$6,308.87	$1,300.00	1.37
Storage Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Women Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	5,512	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	5,512	0.01	101	0.0	$13.47	$48.20	$10.00	2.84
Room 212	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Women Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Custodial	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.08	793	0.0	$105.33	$291.50	$50.00	2.29
Room 211 Science Lab	13	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	13	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.63	6,048	0.0	$803.38	$1,352.73	$280.00	1.34
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 210	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Electrical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 209	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 201	10	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.48	4,653	0.0	$617.98	$1,067.33	$220.00	1.37
Room 208	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	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
Room 207	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Storage Room	5	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.24	2,326	0.0	$308.99	$591.67	$120.00	1.53
Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 218	5	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.24	2,326	0.0	$308.99	$591.67	$120.00	1.53
Room 202	10	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.48	4,653	0.0	$617.98	$1,067.33	$220.00	1.37
Room 206	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.22	2,115	0.0	$280.87	$584.00	$100.00	1.72
Room 205	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.16	1,586	0.0	$210.65	$467.00	$80.00	1.84
Room 205	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 206	3	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	3	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	3,858	0.08	740	0.0	$98.25	$305.60	$20.00	2.91
Room 204	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Room 204B	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 272	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Girls Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$460.27	$75.00	3.12
Room 350 Science Lab	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Boys Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Room 254A	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Room 254A	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 267	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Room 254A	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Room 266	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Room 264	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.72	6,979	0.0	$926.97	$1,659.00	$340.00	1.42
Room 265	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Room 265	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 281	1	Exit Signs: Fluorescent	Wall Switch	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	Wall Switch	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Room 255	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 256	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 257	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 262	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 263	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 258	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 261	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 260	12	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.62	6,040	0.0	$802.20	$1,257.60	$260.00	1.24
Room 260	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
Room 275	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 276	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Room 313 Electric Construction	16	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,772	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,040	0.83	8,433	0.0	$1,120.05	$1,754.13	$360.00	1.24
Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Tool Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 312	12	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,772	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,040	0.62	6,324	0.0	$840.04	$1,257.60	$260.00	1.19
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Storage Room	9	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.47	4,530	0.0	$601.65	$972.20	$200.00	1.28
Office	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Office	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 311	16	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.83	8,053	0.0	$1,069.60	$1,754.13	$360.00	1.30
Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Tool Room	1	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	393	0.0	$52.20	$95.13	$20.00	1.44
Room 314	10	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.48	4,653	0.0	$617.98	$1,067.33	$220.00	1.37

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Room 315	10	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.48	4,653	0.0	$617.98	$1,067.33	$220.00	1.37
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 316	14	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.38	3,701	0.0	$491.52	$935.00	$160.00	1.58
Room 310	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Room 300	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.77	7,444	0.0	$988.77	$1,754.13	$360.00	1.41
Room 301	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.22	2,115	0.0	$280.87	$584.00	$100.00	1.72
Laundry Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.16	1,586	0.0	$210.65	$467.00	$80.00	1.84
Apprentice Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 309	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Room 309	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.15	1,464	0.0	$194.49	$409.50	$70.00	1.75
Room 309	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Custodian	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 303	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
Room 308	26	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	26	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.35	13,086	0.0	$1,738.09	$2,705.47	$560.00	1.23
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Locker Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 304 Plumbing	15	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,772	Relamp	Yes	15	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,040	0.78	7,906	0.0	$1,050.05	$1,659.00	$340.00	1.26
Tool Room	2	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	1,007	0.0	$133.70	$306.27	$60.00	1.84
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 307 Culinary Art	10	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.48	4,653	0.0	$617.98	$1,067.33	$220.00	1.37
Room 306	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 305	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 421	18	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	5,512	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.47	4,530	0.0	$601.65	$1,285.00	$220.00	1.77

	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
Room 421	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 422	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Room 422	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 420	10	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	5,512	Relamp	No	10	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.20	1,965	0.0	$261.00	$585.00	$100.00	1.86
Room 423	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73
Sherif Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Restroom	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.14	1,322	0.0	$175.54	$562.50	$85.00	2.72
Springler Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Data Center	17	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	17	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.82	7,910	0.0	$1,050.57	$1,849.27	$380.00	1.40
Data Center	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Data Center	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
Room 419 Science Lab	24	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	5,512	Relamp	Yes	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.62	6,040	0.0	$802.20	$1,636.00	$280.00	1.69
Room 419 Science Lab	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
Room 417	18	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	5,512	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.47	4,530	0.0	$601.65	$1,285.00	$220.00	1.77
Room 417	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 417	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Room 418	10	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch	60	5,512	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.26	2,517	0.0	$334.25	$701.00	$120.00	1.74
SPE 101	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 402	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.58	5,583	0.0	$741.58	$1,257.60	$260.00	1.35
Room 402	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 403	29	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	29	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.40	13,493	0.0	$1,792.15	$2,990.87	$620.00	1.32
Women Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 404	18	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	18	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.87	8,375	0.0	$1,112.37	$1,944.40	$400.00	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
Room 404	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Restroom	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.16	1,586	0.0	$210.65	$467.00	$80.00	1.84
Room 416	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 414	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 415	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 405	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Room 405	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.41	3,965	0.0	$526.63	$993.50	$170.00	1.56
Room 405	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 413	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Nurse Office	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	17	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.46	4,494	0.0	$596.85	$1,226.50	$210.00	1.70
Mens Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Women Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Child Study Office	25	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.68	6,608	0.0	$877.72	$1,694.50	$290.00	1.60
Child Study Office	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Main Office	19	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	19	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.52	5,022	0.0	$667.07	$1,343.50	$230.00	1.67
Main Office	14	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	14	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.67	6,514	0.0	$865.17	$1,447.87	$300.00	1.33
Main Lobby	13	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	13	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.48	4,615	0.0	$612.93	$1,236.73	$260.00	1.59
Main Lobby	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 543	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 543	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 544	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 545	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 546	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 547	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99

	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
Room 548	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 549	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 550	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 551	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 552	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 553	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Room 513 - Theater	3	Incandescent: Screw-in 100 W	Wall Switch	100	5,512	Relamp	No	3	LED Screw-In Lamps: LED Lamp	Wall Switch	30	5,512	0.14	1,331	0.0	$176.81	$161.26	$0.00	0.91
Room 513 - Theater	5	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	5	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	302	0.0	$40.14	$537.78	$0.00	13.40
Room 513 - Theater	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Room 513 - Theater	12	Metal Halide: (1) 175W Lamp	Wall Switch	215	5,512	Fixture Replacement	No	12	LED - Fixtures: Downlight Pendant	Wall Switch	52	5,512	1.28	12,399	0.0	$1,646.83	$7,302.96	$60.00	4.40
Room 513 - Theater	16	Metal Halide: (1) 150W Lamp	Wall Switch	190	5,512	Fixture Replacement	No	16	LED - Fixtures: Downlight Pendant	Wall Switch	45	5,512	1.52	14,706	0.0	$1,953.29	$9,737.28	$80.00	4.94
Male Dressing Room	46	Incandescent: Screw-in 40 W	Wall Switch	40	5,512	Relamp	Yes	46	LED Screw-In Lamps: LED Lamp	Occupancy Sensor	7	3,858	1.06	10,235	0.0	$1,359.39	$2,588.64	$20.00	1.89
Male Dressing Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Women Restroom	20	Incandescent: Screw-in 40 W	Wall Switch	40	5,512	Relamp	Yes	20	LED Screw-In Lamps: LED Lamp	Occupancy Sensor	7	3,858	0.46	4,450	0.0	$591.04	$1,345.06	$35.00	2.22
Women Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.07	710	0.0	$94.30	$190.27	$40.00	1.59
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Restroom	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Theater Stage	38	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	38	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	1.39	13,489	0.0	$1,791.64	$3,615.07	$760.00	1.59
Theater Stage	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 512	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Room 507	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Entrance	4	Halogen Incandescent: Screw-in 90 W	Wall Switch	90	5,512	Relamp	Yes	4	LED Screw-In Lamps: LED Lamp	Occupancy Sensor	25	3,858	0.19	1,838	0.0	$244.16	$331.01	$20.00	1.27
Women Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Storage Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75

	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 Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Mens Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	5,512	0.04	355	0.0	$47.15	$95.13	$20.00	1.59
Mens Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Mens Locker Room	1	Compact Fluorescent: 2x18 W 4-PIN	Wall Switch	36	5,512	Relamp	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	25	5,512	0.01	70	0.0	$9.26	$53.65	$0.00	5.79
Mens Locker Room	23	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	23	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.63	6,080	0.0	$807.50	$1,577.50	$270.00	1.62
Mens Locker Room	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 511 - Dance Room	38	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	38	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	1.04	10,044	0.0	$1,334.13	$2,571.00	$440.00	1.60
Room 511 - Dance Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Room 511 - Dance Room	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 510 - Dance Room	45	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	45	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	1.23	11,895	0.0	$1,579.89	$3,096.50	$530.00	1.62
Room 510 - Dance Room	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Pool Mezzanine	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.25	2,379	0.0	$315.98	$642.50	$110.00	1.69
Pool Mezzanine	1	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.00	60	0.0	$8.03	$107.56	$0.00	13.40
Room 509	21	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	21	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.01	9,771	0.0	$1,297.76	$2,229.80	$460.00	1.36
Room 509	20	Metal Halide: (1) 250W Lamp	Wall Switch	295	5,512	Fixture Replacement	Yes	20	LED - Fixtures: Downlight Pendant	Occupancy Sensor	75	3,858	3.18	30,743	0.0	$4,083.39	$16,571.60	$800.00	3.86
Room 509	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
Room 509	30	Metal Halide: (1) 100W Lamp	Wall Switch	100	5,512	Fixture Replacement	Yes	30	LED - Fixtures: Downlight Pendant	Occupancy Sensor	25	3,858	1.62	15,689	0.0	$2,083.79	$26,357.40	$1,200.00	12.07
Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.06	628	0.0	$83.35	$175.50	$30.00	1.75
Pool	60	Metal Halide: (1) 400W Lamp	Wall Switch	458	5,512	Fixture Replacement	Yes	60	LED - Fixtures: Downlight Pendant	Occupancy Sensor	164	3,858	13.50	130,529	0.0	$17,337.16	$49,714.80	$2,400.00	2.73
Pool	20	Metal Halide: (1) 1000W Lamp	Wall Switch	1,080	5,512	Fixture Replacement	Yes	20	LED - Fixtures: Downlight Pendant	Occupancy Sensor	300	3,858	11.41	110,295	0.0	$14,649.69	$16,571.60	$800.00	1.08
Pool	6	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	6	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	363	0.0	$48.17	$645.33	$0.00	13.40
Storage Room	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.27	2,643	0.0	$351.09	$701.00	$120.00	1.65
Corridor - Pool	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.16	1,586	0.0	$210.65	$467.00	$80.00	1.84
Corridor - Pool	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Pool Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Filter Room	5	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.24	2,326	0.0	$308.99	$591.67	$120.00	1.53
Women Locker Room	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.49	4,758	0.0	$631.96	$1,285.00	$220.00	1.69
Women Locker Room	4	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	4	LED Exit Signs: 2 W Lamp	None	6	8,760	0.02	242	0.0	$32.11	$430.22	$0.00	13.40
Room 507 - Classroom	16	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	16	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.77	7,444	0.0	$988.77	$1,754.13	$360.00	1.41
Room 507 - Classroom	2	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	121	0.0	$16.06	$215.11	$0.00	13.40
Room 502	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Room 503	9	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.43	4,187	0.0	$556.18	$972.20	$200.00	1.39
Electrical Closet	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.04	418	0.0	$55.57	$117.00	$20.00	1.75
Room 504 - Auxiliary Gym	6	Metal Halide: (1) 400W Lamp	Wall Switch	458	5,512	Fixture Replacement	Yes	6	LED - Fixtures: Downlight Pendant	Occupancy Sensor	164	3,858	1.35	13,053	0.0	$1,733.72	$4,971.48	$240.00	2.73
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Mens Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Womens Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$555.40	$95.00	2.48
Room 505 - Gymn	32	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,512	Relamp	Yes	32	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	1.67	16,106	0.0	$2,139.19	$3,160.27	$660.00	1.17
Room 505 - Gymn	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
Mens Restroom	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$840.80	$155.00	1.85
Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.10	931	0.0	$123.60	$306.27	$60.00	1.99
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.02	209	0.0	$27.78	$58.50	$10.00	1.75
Training Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.19	1,861	0.0	$247.19	$496.53	$100.00	1.60
Girls Restroom	6	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	6	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.29	2,792	0.0	$370.79	$686.80	$140.00	1.47
New Gymn	28	Linear Fluorescent - T5: 4' T5 (28W) - 4L	Wall Switch	120	5,772	Relamp	Yes	28	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	4,040	1.46	14,757	0.0	$1,960.09	$2,779.73	$580.00	1.12
New Gymn	3	Exit Signs: Fluorescent	None	12	8,760	Fixture Replacement	No	3	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	181	0.0	$24.09	$322.67	$0.00	13.40
Storage Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,858	0.11	1,057	0.0	$140.44	$350.00	$60.00	2.07
Gym Entrance	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.14	1,396	0.0	$185.39	$401.40	$80.00	1.73

	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
Room 563	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Room 566	8	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	5,512	Relamp	Yes	8	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,858	0.38	3,722	0.0	$494.39	$877.07	$180.00	1.41
Exterior Perimeter Wallpack	58	Metal Halide: (1) 100W Lamp	Daylight Dimming	128	4,380	Fixture Replacement	No	58	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	30	4,380	3.73	28,630	0.0	$3,802.75	$22,659.27	$5,800.00	4.43
Exterior Perimeter Wallpack	101	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	57	4,380	None	No	101	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	57	4,380	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Exterior Perimeter Walkway Light	33	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Daylight Dimming	36	4,380	None	No	33	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Daylight Dimming	36	4,380	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shpping Dog	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	5,512	Relamp	No	5	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	5,512	0.11	1,046	0.0	$138.92	$292.50	$50.00	1.75

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
200 Wing Boiler Room	New 100-200 Wing Heating Hot Water System	2	Heating Hot Water Pump	5.0	89.5%	Yes	1,248	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 wing Boiler Room	400-1100-1200 Wing	2	Heating Hot Water Pump	7.5	91.7%	Yes	1,248	No	91.7%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 wing Boiler Room	100-200-300 Wing	2	Heating Hot Water Pump	15.0	93.0%	Yes	1,248	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 wing Boiler Room	Boiler Room Unit Heater	1	Heating Hot Water Pump	1.5	86.5%	No	1,248	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 wing Boiler Room	300 Wing	2	Heating Hot Water Pump	5.0	90.2%	Yes	1,248	No	90.2%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 wing Boiler Room	Old 100-200-300 Wing	1	Other	0.3	71.0%	No	2,745	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 wing Boiler Room	300 wing Boiler Room	1	Ventilation Fan	0.3	71.0%	No	2,745	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Warehouse	300-400 Wing	2	Other	1.5	82.0%	No	2,745	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Warehouse	Old Warehouse	1	Exhaust Fan	1.5	82.0%	No	2,496	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Warehouse	Compressor	1	Air Compressor	7.5	86.0%	No	1,560	No	86.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pump Room	Unit Heaters	2	Heating Hot Water Pump	0.3	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Pump Room	Theater	1	Heating Hot Water Pump	3.0	86.5%	No	1,248	No	86.5%	Yes	1	0.39	1,405	0.0	$186.56	$3,007.65	$0.00	16.12
Pump Room	Theater	1	Heating Hot Water Pump	3.0	89.5%	No	1,248	No	89.5%	Yes	1	0.38	1,358	0.0	$180.31	$3,007.65	$0.00	16.68
500 Wing Boiler Room	Boilers	2	Combustion Air Fan	0.8	71.0%	No	2,745	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Boiler Room	500 Wing	2	Heating Hot Water Pump	2.0	84.0%	No	1,248	No	84.0%	Yes	2	0.56	2,031	0.0	$269.81	$5,457.71	$0.00	20.23
500 Wing Boiler Room	500 Wing	1	Heating Hot Water Pump	0.5	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Boiler Room	500 Wing	2	Heating Hot Water Pump	0.2	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Boiler Room	New Gym & Hallway	2	Heating Hot Water Pump	0.8	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Boiler Room	Old Gym, Auxil Gym, Rooms 502,503,506,Gym Lobby, Pool Hallway	2	Heating Hot Water Pump	0.8	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 635	600 Wing	2	Heating Hot Water Pump	0.3	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Room 635	600 Wing VAV	1	Heating Hot Water Pump	1.5	84.0%	Yes	1,248	No	84.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	600 Wing Restroom	1	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof New Gym	Locker Room & Restrooms	2	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof Old Gym	Locker Room & Restrooms	1	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	3	Exhaust Fan	0.8	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	4	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	2	Exhaust Fan	0.5	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	6	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	6	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	3	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Kitchen	1	Kitchen Hood Exhaust Fan	1.3	82.0%	No	2,496	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	7	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	16	Exhaust Fan	0.8	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	5	Exhaust Fan	1.5	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	1	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	2	Exhaust Fan	0.5	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	1	Exhaust Fan	1.5	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	2	Exhaust Fan	2.0	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	1	Exhaust Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	400 Wing Kitchen	1	Kitchen Hood Exhaust Fan	5.0	71.0%	No	2,496	No	71.0%	Yes	1	0.00	8,536	124.3	$2,593.31	$3,275.85	$1,000.00	0.88

		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
Rooftop	School	1	Exhaust Fan	0.5	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	School	1	Exhaust Fan	0.5	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Dectron Room	Dectron	1	Heating Hot Water Pump	0.3	71.0%	No	1,248	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
School	School	24	Supply Fan	0.3	71.0%	No	2,496	No	71.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 601	Elevator	1	Other	20.0	88.5%	No	936	No	88.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Filter Room	Pool	1	Water Supply Pump	50.0	93.0%	No	2,496	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Wood Shop	Wood Shop	1	Exhaust Fan	10.0	86.7%	No	2,496	No	86.7%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Filter Room	Filter Room	2	Other	5.0	86.5%	No	2,496	No	86.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Filter Room	Filter Room	2	Other	0.8	77.0%	No	2,496	No	77.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Filter Room	Filter Room	1	Other	0.8	77.0%	No	2,496	No	77.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Filter Room	Filter Room	1	Other	7.5	84.5%	No	2,496	No	84.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Filter Room	Filter Room	1	Other	10.0	87.0%	No	2,496	No	87.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 1117	Elevator	1	Other	60.0	88.0%	No	936	No	88.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Elevator Room	Elevator	1	Other	20.0	86.0%	No	936	No	86.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 108	Auto Shop Lift	3	Other	2.0	82.0%	No	1,872	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 108	Cpmpress Air	2	Air Compressor	5.0	84.0%	No	1,560	No	84.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shop	Shop	1	Other	0.8	72.0%	No	1,872	No	72.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shop	Shop	1	Other	1.0	81.5%	No	1,872	No	81.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shop1	Shop	1	Other	5.5	84.0%	No	1,872	No	84.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shop	Shop	1	Other	1.5	81.5%	No	1,872	No	81.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Shop	Shop	1	Other	3.0	82.0%	No	1,872	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shop	Shop	2	Air Compressor	5.0	82.5%	No	1,560	No	82.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Autoshop	Paint Booth	1	Supply Fan	10.0	84.7%	No	1,872	Yes	91.7%	Yes	1	3.07	6,275	0.0	$833.45	$5,375.00	$800.00	5.49
Autoshop	Paint Booth	1	Exhaust Fan	7.5	86.0%	No	1,872	No	86.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 260	Room 260	1	Air Compressor	5.0	87.5%	No	1,560	No	87.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 260	Room 260	3	Other	1.5	82.0%	No	1,872	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Wood Shop	Wood Shop	2	Supply Fan	1.5	82.0%	No	1,872	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Wood Shop	Wood Shop	1	Air Compressor	5.0	84.5%	No	1,560	No	84.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 109	Room 109	1	Other	2.0	84.0%	No	1,872	No	84.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 110	Room 110	2	Other	2.0	84.0%	No	1,872	No	84.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 313	Room 313	1	Air Compressor	5.0	84.0%	No	1,560	No	84.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	Diswasher	1	Other	7.5	86.0%	No	1,872	No	86.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Shop	Shop	1	Other	7.5	86.0%	No	1,872	No	86.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mechanical Room	Air Handler	2	Supply Fan	7.5	82.5%	No	1,872	Yes	91.7%	Yes	2	4.78	9,858	0.0	$1,309.31	$9,521.18	$1,200.00	6.36

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
Old Warehouse Office	Old Warehouse Office	1	Window AC	2.00		Yes	1	Window AC	2.00		12.00		No	0.32	536	0.0	$71.24	$2,177.52	$0.00	30.57
Old Warehouse Office	Old Warehouse Office	1	Window AC	1.50		Yes	1	Window AC	1.50		12.00		No	0.24	402	0.0	$53.43	$1,633.14	$0.00	30.57
Old Warehouse Office	Storage Office	1	Window AC	0.67		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop 600 Wing	2nd Floor 600 Wing	1	Packaged AC	35.00		Yes	1	Split-System AC	35.00		9.50		No	3.48	5,883	0.0	$781.34	$38,505.25	$0.00	49.28
Rooftop 600 Wing	1st Floor 600 Wing	1	Split-System AC	30.00		Yes	1	Split-System AC	30.00		9.50		No	-1.27	-2,143	0.0	-$284.63	$33,004.50	$0.00	-115.95
Rooftop 600 Wing	Computer Room	1	Split-System AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop New Gym	New Gymnasium	1	Packaged AC	20.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop New Gym	Hallway & Locker Room	1	Packaged AC	9.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop Old Gym	Old Gymnasium	1	Packaged AC	30.00		Yes	1	Packaged AC	30.00		9.50		Yes	5.35	15,520	0.0	$2,061.42	$67,579.15	$250.00	32.66
Rooftop 500 Wing	500 Wing	1	Packaged AC	12.50		Yes	1	Packaged AC	12.50		11.50		Yes	3.90	8,813	0.0	$1,170.59	$18,323.13	$1,237.50	14.60
Rooftop	Fitness Room	1	Packaged AC	8.50		Yes	1	Packaged AC	8.50		11.50		Yes	2.65	5,993	0.0	$796.00	$15,897.90	$870.50	18.88
Rooftop	Pool Hallway	1	Packaged AC	7.50		Yes	1	Packaged AC	7.50		11.50		Yes	2.34	5,288	0.0	$702.35	$14,115.79	$797.50	18.96
Rooftop	500 Wing Classrooms	3	Packaged AC	4.00		Yes	3	Packaged AC	4.00		14.00		Yes	5.34	11,450	0.0	$1,520.77	$28,727.52	$1,854.00	17.67
Rooftop	500 Wing Common Area	1	Packaged AC	17.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	500 Wing Small Dance Room	1	Packaged AC	25.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Pool Dectron West Unit	1	Split-System AC	3.00		Yes	1	Split-System AC	3.00		14.00		No	0.69	1,163	0.0	$154.51	$4,488.66	$276.00	27.26
Rooftop	Pool Locker Room	1	Split-System AC	25.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Theater Stage	2	Packaged AC	15.00		Yes	2	Packaged AC	15.00		11.50		Yes	9.35	21,152	0.0	$2,809.41	$43,615.50	$2,870.00	14.50
Rooftop	500 Wing Common Area	1	Packaged AC	7.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Boys Dance Studio	2	Packaged AC	17.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Rooftop	Theater	2	Packaged AC	20.00		Yes	2	Packaged AC	20.00		10.50		Yes	10.05	24,805	0.0	$3,294.72	$69,295.96	$3,660.00	19.92
Rooftop	Room 513	1	Split-System AC	2.00		Yes	1	Split-System AC	2.00		14.00		No	0.46	776	0.0	$103.01	$2,992.44	$184.00	27.26
Rooftop	TV Studio	1	Packaged AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	TV Studio Office	1	Split-System AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	500 Wing Offices	1	Packaged AC	15.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Guidance Offices	2	Packaged AC	4.00		Yes	2	Packaged AC	5.00		14.00		Yes	2.56	6,348	0.0	$843.15	$23,689.60	$1,420.00	26.41
Rooftop	400 Wing	1	Packaged AC	5.00		Yes	1	Split-System AC	5.00		14.00		No	1.86	3,136	0.0	$416.58	$7,481.10	$460.00	16.85
Rooftop	400 Wing Common Area	2	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Staff Cafeteria	1	Split-System AC	4.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Staff Kitchen	1	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	400 Wing Offices	2	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Cafeteria Office	1	Split-System AC	2.00		Yes	1	Split-System AC	2.00		14.00		No	0.46	776	0.0	$103.01	$2,992.44	$184.00	27.26
Rooftop	Pool Dectron	2	Split-System AC	6.00		Yes	2	Split-System AC	6.00		11.50		No	1.26	2,124	0.0	$282.16	$13,965.24	$876.00	46.39
Rooftop	400 Wing Kitchen	1	Packaged AC	7.50		Yes	1	Packaged AC	7.50		11.50		Yes	2.34	5,288	0.0	$702.35	$14,115.79	$797.50	18.96
Rooftop	Cafeteria	1	Packaged AC	35.00		Yes	1	Packaged AC	35.00		9.50		Yes	6.24	18,107	0.0	$2,405.00	$80,059.01	$250.00	33.18
Rooftop	Ford Class	3	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Nurse Office	1	Split-System AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Black Box	1	Split-System AC	6.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Printing Room	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57
Rooftop	New Warehouse	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
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Rooftop	400 Wing Classroom	4	Packaged AC	3.00		Yes	4	Packaged AC	3.00		14.00		Yes	5.34	11,450	0.0	$1,520.77	$29,227.52	$2,104.00	17.84
Rooftop	400 Wing Science Lab	1	Split-System AC	2.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	400 Wing Science Lab	3	Split-System AC	6.00		Yes	3	Split-System AC	6.00		11.50		No	1.89	3,186	0.0	$423.24	$20,947.86	$1,314.00	46.39
Rooftop	400 Wing Science Lab	1	Split-System AC	2.50		Yes	1	Split-System AC	2.50		14.00		No	0.57	969	0.0	$128.76	$3,740.55	$230.00	27.26
Rooftop	400 Wing Classroom	2	Split-System AC	2.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Teacher Aid Room	1	Split-System AC	1.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	IT Room	1	Split-System AC	1.50		Yes	1	Split-System AC	1.50		14.00		No	0.34	582	0.0	$77.26	$2,244.33	$138.00	27.26
Rooftop	IT Room	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14
Rooftop	IT Center	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	Classroom	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14
Rooftop	Classroom	1	Packaged AC	2.00		Yes	1	Packaged AC	2.00		14.00		Yes	0.89	1,908	0.0	$253.46	$5,037.92	$434.00	18.16
Rooftop	Classroom	1	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Data Center	6	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Computer Room	1	Split-System AC	0.67		Yes	1	Split-System AC	0.67		14.00		No	0.15	260	0.0	$34.51	$1,002.47	$61.64	27.26
Rooftop	1200 Wing 2nd Floor	1	Packaged AC	31.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	1200 Wing 1st Floor	1	Packaged AC	31.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	300 Wing Plumbing Class	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	300 Wing HVAC Class	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	300 Wing Culinary Class	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	300 Wing Class	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57

		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
Rooftop	300 Wing Class	2	Packaged AC	4.00		Yes	2	Packaged AC	4.00		14.00		Yes	3.56	7,633	0.0	$1,013.85	$19,151.68	$1,236.00	17.67
Rooftop	Old 200 Wing Class - AC24, AC3	2	Packaged AC	3.00		Yes	2	Packaged AC	3.00		14.00		Yes	2.67	5,725	0.0	$760.38	$14,613.76	$1,052.00	17.84
Rooftop	Old 200 Wing Science Lab - AC28	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57
Rooftop	Old 200 Wing Class	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57
Rooftop	Old 100 Wing Common Area - AC18	1	Packaged AC	7.50		Yes	1	Packaged AC	7.50		11.50		Yes	2.34	5,288	0.0	$702.35	$14,115.79	$797.50	18.96
Rooftop	Media Center - AC15	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14
Rooftop	Old 100 Wing Class - AC22	1	Packaged AC	2.50		Yes	1	Packaged AC	2.50		14.00		Yes	1.11	2,385	0.0	$316.83	$6,172.40	$480.00	17.97
Rooftop	Old 200 Wing Class - AC23	1	Packaged AC	2.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Old 100 Wing Cafeteria - AC26	1	Packaged AC	2.50		Yes	1	Packaged AC	2.50		14.00		Yes	1.11	2,385	0.0	$316.83	$6,172.40	$480.00	17.97
Rooftop	Old 100 Wing Cafeteria - AC13	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	Old 100 Wing Cafeteria - AC27	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	Sherif Office	1	Split-System AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Automotive Mech	2	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Welding Shop	1	Packaged AC	10.00		Yes	1	Packaged AC	10.00		11.50		Yes	3.12	7,051	0.0	$936.47	$18,571.06	$980.00	18.78
Rooftop	New 200 Wing - AC2	1	Packaged AC	55.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Science Lab	2	Split-System AC	0.95		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	New 100 Wing - AC1	1	Packaged AC	30.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Old 100 Wing Class - AC15	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14
Rooftop	Hair Class	2	Split-System AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	100 Wing Class - AC20	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14

		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
Rooftop	100 Wing Class -AC21	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57
Rooftop	100 Wing Class -AC3	1	Packaged AC	4.00		Yes	1	Packaged AC	4.00		14.00		Yes	1.78	3,817	0.0	$506.92	$9,575.84	$618.00	17.67
Rooftop	100 Wing Office - CU1	1	Split-System AC	3.50		Yes	1	Split-System AC	3.50		14.00		No	0.80	1,357	0.0	$180.27	$5,236.77	$322.00	27.26
Rooftop	100 Wing Office - CU1	2	Split-System AC	5.00		Yes	2	Split-System AC	5.00		14.00		No	2.30	3,878	0.0	$515.05	$14,962.20	$920.00	27.26
Rooftop	Old 100 Wing Class - AC16	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		Yes	1.34	2,862	0.0	$380.19	$7,306.88	$526.00	17.84
Rooftop	Old 200 Wing Class - AC5	5	Packaged AC	3.00		Yes	5	Packaged AC	3.00		14.00		Yes	6.68	14,312	0.0	$1,900.96	$36,534.40	$2,630.00	17.84
Rooftop	200 Wing Media Center - AC15	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14
Rooftop	100 Wing Office - AC25	1	Packaged AC	5.00		Yes	1	Packaged AC	5.00		14.00		Yes	2.23	4,771	0.0	$633.65	$11,844.80	$710.00	17.57
Rooftop	Old 100 Wing Class - AC13	2	Packaged AC	3.00		Yes	2	Packaged AC	3.00		14.00		Yes	2.67	5,725	0.0	$760.38	$14,613.76	$1,052.00	17.84
Rooftop	Old 100 Wing Class - AC22	2	Packaged AC	2.50		Yes	2	Packaged AC	2.50		14.00		Yes	2.23	4,771	0.0	$633.65	$12,344.80	$960.00	17.97
Rooftop	WAWA Store - AC20	1	Packaged AC	7.50		Yes	1	Packaged AC	7.50		11.50		Yes	2.34	5,288	0.0	$702.35	$14,115.79	$797.50	18.96
Rooftop	Autobody	2	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Gas Engine Room	2	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	300 Wing Class - AC11	1	Packaged AC	6.00		Yes	1	Packaged AC	6.00		11.50		Yes	1.87	4,230	0.0	$561.88	$11,442.63	$688.00	19.14
Rooftop	300 Wing Class - AC14	1	Packaged AC	4.00		Yes	1	Packaged AC	4.00		14.00		Yes	1.78	3,817	0.0	$506.92	$9,575.84	$618.00	17.67
Room 313	Room 313	1	Window AC	2.00		Yes	1	Window AC	2.00		12.00		No	0.55	931	0.0	$123.71	$2,177.52	$0.00	17.60
Room 306	Room 306	1	Split-System AC	1.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
HVAC Shop	HVAC Shop	1	Split-System AC	3.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 260	Room 260	2	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Bakery Room	Bakery Room	3	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	Kitchen	2	Split-System AC	3.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Electric Shop	Electric Shop	1	Split-System AC	2.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 404	Room 404	1	Split-System AC	5.00		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
New 200 Wing Boiler Room	New 100-200 Wing	2	Non-Condensing Hot Water Boiler	1,263.60	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 Wing Boiler Room	Old 100-200 and 300 Wing	2	Condensing Hot Water Boiler	1,860.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 Wing Boiler Room	400, 1100, 1200 Wing	2	Condensing Hot Water Boiler	1,860.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Boiler Room	500 Wing	2	Non-Condensing Hot Water Boiler	1,526.00	Yes	2	Condensing Hot Water Boiler	1,526.00	93.00%	Et	0.00	0	66.6	$781.17	$58,291.13	$6,714.40	66.02
Room 635	600 Wing	2	Non-Condensing Hot Water Boiler	296.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Autoshop	Paint Booth	1	Furnace	960.00	Yes	1	Furnace	960.00	95.00%	AFUE	0.00	0	16.6	$194.28	$21,751.04	$400.00	109.90
Roof 600 Wing	2nd Floor 600 Wing	1	Furnace	283.50	Yes	1	Furnace	283.50	95.00%	AFUE	0.00	0	4.5	$52.89	$6,423.35	$400.00	113.89
Roof 600 Wing	1st Floor 600 Wing	1	Furnace	283.50	Yes	1	Furnace	283.50	95.00%	AFUE	0.00	0	4.5	$52.89	$6,423.35	$400.00	113.89
Rooftop New Gym	New Gymnasium	1	Furnace	219.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop New Gym	Hallway & Locker Room	1	Furnace	156.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop Old Gym	Old Gymnasium	1	Furnace	283.50	Yes	1	Furnace	283.50	95.00%	AFUE	0.00	0	4.5	$52.89	$6,423.35	$400.00	113.89
Rooftop 500 Wing	500 Wing	1	Furnace	183.68	Yes	1	Furnace	183.68	95.00%	AFUE	0.00	0	2.7	$31.43	$4,161.70	$400.00	119.68
Rooftop	Fitness Room	1	Furnace	102.50	Yes	1	Furnace	102.50	95.00%	AFUE	0.00	0	1.5	$17.54	$2,322.38	$400.00	109.60
Rooftop	Pool Hallway	1	Furnace	147.60	Yes	1	Furnace	147.60	95.00%	AFUE	0.00	0	2.2	$25.26	$3,344.22	$400.00	116.57
Rooftop	500 Wing Common Area	1	Furnace	96.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	TV Studio	1	Furnace	284.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	500 Wing Offices	1	Furnace	284.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	400 Wing Kitchen	1	Furnace	147.60	Yes	1	Furnace	147.60	95.00%	AFUE	0.00	0	2.2	$25.26	$3,344.22	$400.00	116.57
Rooftop	401 Wing Kitchen	1	Furnace	204.00	Yes	1	Furnace	204.00	95.00%	AFUE	0.00	0	3.5	$41.29	$4,622.10	$400.00	102.27
Rooftop	Cafeteria	1	Furnace	283.50	Yes	1	Furnace	283.50	95.00%	AFUE	0.00	0	4.5	$52.89	$6,423.35	$400.00	113.89

		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
Rooftop	1200 Wing	1	Furnace	432.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	1100 Wing	1	Furnace	432.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Welding Shop	1	Furnace	147.60	Yes	1	Furnace	147.60	95.00%	AFUE	0.00	0	2.2	$25.26	$3,344.22	$400.00	116.57
Rooftop	New 200 Wing - AC2	1	Furnace	680.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	New 100 Wing - AC1	1	Furnace	400.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Welding Shopb - MUA1	1	Furnace	281.00	Yes	1	Furnace	281.00	95.00%	AFUE	0.00	0	4.8	$56.87	$6,366.71	$400.00	104.92
Rooftop	Welding Shop - MUA2	1	Furnace	184.00	Yes	1	Furnace	184.00	95.00%	AFUE	0.00	0	3.2	$37.24	$4,168.95	$400.00	101.21
Rooftop	Art Studio	1	Furnace	320.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop	Diesel Shop	1	Furnace	320.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

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
New 200 Wing Boilerv Room	New 100-200 Wings	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
300 Wing Boiler Room	Old 100-200-300 Wing	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Ware house	300-400 Wing	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Mechanical Room	500 Wing Locker Rooms	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 635	600 Wing	1	Storage Tank Water Heater (≤ 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 1114	100 Wing Kitchen	1	Storage Tank Water Heater (≤ 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
500 Wing Custodial Closet	500 Wing	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
School	21	Faucet Aerator (Lavatory)	2.20	1.00	0.00	0	36.8	$432.41	$150.57	$0.00	0.35
School	9	Faucet Aerator (Kitchen)	3.00	2.20	0.00	0	10.5	$123.55	$64.53	$0.00	0.52

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
New Cafeteria	1	Low Temp Freezer (-35F to -5F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria	1	Medium Temp Freezer (0F to 30F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	1	Medium Temp Freezer (0F to 30F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	1	Medium Temp Freezer (0F to 30F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing kitchen	1	Cooler (35F to 55F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing kitchen	1	Low Temp Freezer (-35F to -5F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Baking Room	1	Medium Temp Freezer (0F to 30F)	No	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

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
New Cafeteria	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
New Cafeteria	1	Stand-Up Freezer, Solid Door (>50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria	1	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria/100 Wing Kitchen	2	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	1	Stand-Up Refrigerator, Glass Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Baking Room	1	Stand-Up Refrigerator, Glass Door (16 - 30 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 112	1	Stand-Up Refrigerator, Glass Door (>50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 112	1	Stand-Up Freezer, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 112	1	Stand-Up Refrigerator, Glass Door (16 - 30 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
New Cafeteria	1	Ice Making Head (≥450 lbs/day), Batch	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	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
New Cafeteria/Baker Room	2	Insulated Food Holding Cabinet (Full Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria	2	Insulated Food Holding Cabinet (3/4 Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria/Old Cafeteria	2	Gas Convection Oven (Full Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria	1	Gas Combination Oven/Steam Cooker (<15 Pans)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria/Baking Room	3	Gas Combination Oven/Steam Cooker (<15 Pans)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria/Baking Room	2	Gas Fryer	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria	1	Electric Convection Oven (Half Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
New Cafeteria	1	Electric Convection Oven (Half Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	1	Electric Griddle (3 Feet Width)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria/100 Wing Kitchen	2	Gas Combination Oven/Steam Cooker (<15 Pans)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Baking Room	1	Electric Convection Oven (Full Size)	0	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	1	Gas Fryer	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	1	Insulated Food Holding Cabinet (1/2 Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Room 112	1	Electric Convection Oven (Full Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	1	Gas Fryer	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	1	Gas Griddle (≤2 Feet Width)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	2	Gas Convection Oven (Half Size)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	1	Gas Griddle (≤2 Feet Width)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	1	Gas Griddle (≤2 Feet Width)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Baking Room	1	Gas Griddle (≤2 Feet Width)	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
New Cafeteria	1	Door Type (High Temp)	Electric	N/A	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Old Cafeteria	1	Single Tank Conveyor (High Temp)	Electric	N/A	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
100 Wing Kitchen	1	Single Tank Conveyor (High Temp)	Electric	N/A	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?
School	393	Desktop with LCD Monitors	191.0	Yes
School	45	Copy Machine	800.0	Yes
School	81	Printer	175.0	Yes
School	11	TV	119.0	Yes
School	21	Microwave	1,000.0	No
School	17	Refrigerators	195.0	Yes
Data Center	1	Power Protection Unit 1	11,400.0	Yes
Data Center	1	Power Protection Unit 2	12,200.0	Yes
Data Center	1	Power Protection Unit 3	12,400.0	Yes
Data Center	1	Power Protection Unit 4	11,500.0	Yes
Data Center	1	Power Protection Unit 5	11,600.0	Yes
Data Center	1	Power Protection Unit 6	12,300.0	Yes

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
500 Wing Corridor	2	Refrigerated	Yes	0.00	3,224	0.0	$428.18	$460.00	$0.00	1.07
400 Wing Corridor	1	Refrigerated	Yes	0.00	1,612	0.0	$214.09	$230.00	$0.00	1.07
100 Wing Corridor	1	Refrigerated	Yes	0.00	1,612	0.0	$214.09	$230.00	$0.00	1.07

Appendix B: ENERGY STAR® Statement of Energy Performance

ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

N/A

ENERGY STAR® Score[1]

Gloucester County Vocational Technical School

Primary Property Type: Vocational School
Gross Floor Area (ft²): 390,558
Built: 1974

For Year Ending: January 31, 2017
Date Generated: November 13, 2017

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
Gloucester County Vocational Technical School 1360 Tanyard Road Sewell, New Jersey 08080	Gloucester County Vocational Technical School District 1360 Tanyard Road Sewell, NJ 08080 856-468-1445	Amy Capriotti 1360 Tanyard Road Sewell, NJ 08080 856-468-1445 ext. 2601 acapriotti@gcecnj.org

Property ID: 6126327

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
60.8 kBtu/ft²

Source EUI
161.6 kBtu/ft²

Annual Energy by Fuel	
Natural Gas (kBtu)	5,463,906 (23%)
Electric - Solar (kBtu)	2,571,324 (11%)
Electric - Grid (kBtu)	15,701,353 (66%)

National Median Comparison	
National Median Site EUI (kBtu/ft²)	53.2
National Median Source EUI (kBtu/ft²)	141.4
% Diff from National Median Source EUI	14%

Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	2,317

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)