



Local Government Energy Audit: Energy Audit Report



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Brick Township High School

Brick Township Board of Education

300 Chambersbridge Road
Brick, NJ 08723

April 16, 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 savings 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.

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I EXECUTIVE SUMMARY

The New Jersey Board of Public Utilities (NJBP) has sponsored this Local Government Energy Audit (LGEA) Report for Brick Township High 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.

I.1 Facility Summary

Brick Township High School is a two-story building totaling 207,400 square-feet and was constructed in two phases. The building has a flat roof and exterior walls are finished with brick masonry. Interior lighting consists primarily of a combination of linear T8 and T12 lamps and fixtures. Lighting control is provided by both occupancy sensors and manual wall switches. Heating is provided by five condensing boilers and the cooling system consists of window units, split AC, heat pumps, and rooftop packaged units.

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

I.2 Your Cost Reduction Opportunities

Energy Conservation Measures

TRC evaluated 13 measures including 11 high priority measures which together represent an opportunity for Brick Township High School to reduce annual energy costs by \$40,954.91 and annual greenhouse gas emissions by 368,897 lbs CO₂e. We estimate that if all measures were implemented as recommended, the project would pay for itself in 5.2 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 Brick Township High School’s annual energy use by 9%.

Figure 1 – Previous 12 Month Utility Costs

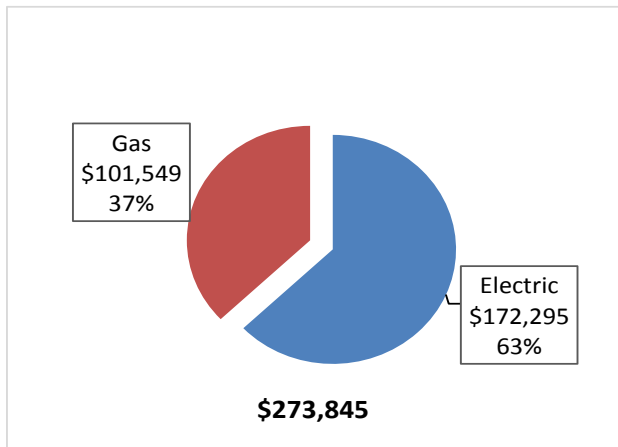
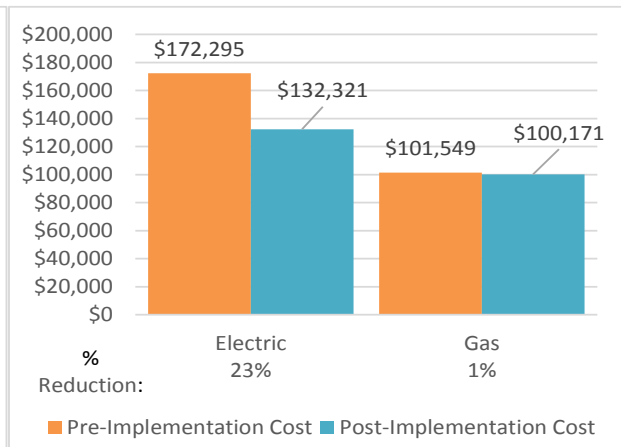


Figure 2 – Potential Post-Implementation Costs



A detailed description of Brick Township High 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 Natural Gas Savings (MMBtu)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		283,591	58.6	0.0	0.0	\$31,998.63	\$203,953.45	\$21,640.00	\$182,313.45	5.7	285,574
ECM 1	Install LED Fixtures	17,733	6.8	0.0	0.0	\$2,000.90	\$30,740.40	\$4,205.00	\$26,535.40	13.3	17,857
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	118,319	22.7	0.0	0.0	\$13,350.42	\$92,306.67	\$5,600.00	\$86,706.67	6.5	119,147
ECM 3	Retrofit Fixtures with LED Lamps	146,390	29.0	0.0	0.0	\$16,517.72	\$78,862.85	\$11,835.00	\$67,027.85	4.1	147,413
ECM 4	Install LED Exit Signs	1,148	0.1	0.0	0.0	\$129.58	\$2,043.55	\$0.00	\$2,043.55	15.8	1,156
Lighting Control Measures		32,417	6.2	0.0	0.0	\$3,657.76	\$29,328.00	\$3,800.00	\$25,528.00	7.0	32,644
ECM 5	Install Occupancy Sensor Lighting Controls	26,985	5.1	0.0	0.0	\$3,044.77	\$28,284.00	\$3,800.00	\$24,484.00	8.0	27,173
ECM 6	Install High/Low Lighting Controls	5,433	1.0	0.0	0.0	\$612.99	\$1,044.00	\$0.00	\$1,044.00	1.7	5,471
Motor Upgrades		3,362	0.5	0.0	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386
ECM 7	Premium Efficiency Motors	3,362	0.5	0.0	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386
Variable Frequency Drive (VFD) Measures		8,481	0.0	74.6	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	8,481	0.0	74.6	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276
Electric Unitary HVAC Measures		53,570	39.7	0.0	0.0	\$6,044.49	\$106,747.87	\$5,139.00	\$101,608.87	16.8	53,944
	Install High Efficiency Electric AC	42,948	25.4	0.0	0.0	\$4,846.01	\$60,104.24	\$2,868.00	\$57,236.24	11.8	43,248
	Install High Efficiency Heat Pumps	10,622	14.2	0.0	0.0	\$1,198.48	\$46,643.63	\$2,271.00	\$44,372.63	37.0	10,696
HVAC System Improvements		14,852	3.3	0.0	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956
ECM 9	Install Dual Enthalpy Outside Economizer Control	14,852	3.3	0.0	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956
Domestic Water Heating Upgrade		0	0.0	53.4	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257
ECM 10	Install Low-Flow Domestic Hot Water Devices	0	0.0	53.4	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257
Plug Load Equipment Control - Vending Machine		8,744	0.0	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805
ECM 11	Vending Machine Control	8,744	0.0	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805
TOTAL FOR PROPOSED MEASURES		351,447	68.5	128.0	128.0	\$40,986.91	\$240,954.89	\$26,840.00	\$214,114.89	5.2	368,897
TOTAL FOR ALL MEASURES		405,017	108.2	128.0	128.0	\$47,031.40	\$347,702.77	\$31,979.00	\$315,723.77	6.7	422,842

* - 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 (IHP 2014). Motors replacements generally assume the same size motors, just higher efficiency. Although occasionally additional savings can be achieved by downsizing motors to better meet current load requirements. This measure saves energy by reducing the power used by the motors, due to improved electrical efficiency.

Variable Frequency Drives (VFDs) are motor control devices. These measures control the speed of a motor so that the motor spins at peak efficiency during partial load conditions. Sensors adapt the speed to flow, temperature, or pressure settings which is much more efficient than using 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.

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 Best Practices

TRC also identified 18 low cost (or no cost) energy efficient best 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 best practices can extend equipment lifetime, improve occupant comfort, provide better health and safety, as well as reduce annual energy and O&M costs. It is our understanding Brick Township Board of Education is already implementing many of the best practices described in the audit reports, however they are listed for representative purposes only.

- Reduce Air Leakage
- Close Doors and Windows
- Perform Proper Lighting Maintenance
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Turn Off Unneeded Motors
- Reduce Motor Short Cycling
- Perform Routine Motor Maintenance
- 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 Proper Boiler Maintenance
- Perform Proper Furnace Maintenance
- Perform Proper Water Heater Maintenance
- Install Plug Load Controls
- Water Conservation

For details on these energy efficient best practices, please refer to Section 5.

On-Site Generation Measures

TRC evaluated the potential for installing on-site generation for Brick Township High School. Brick Township Board of Education implemented a solar energy project in 2017. Selected schools including the Brick Township High School were having their roofs outfitted with photovoltaic (PV) arrays during the site visit. According to the power purchase agreement signed between the Board of Education and GeoPeak Energy, LLC, the Brick Township High School PV array will have a total capacity of 97 kW

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

I.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
- 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.

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 8.2 for additional information on the ESIP Program.

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

2 FACILITY INFORMATION AND EXISTING CONDITIONS

2.1 Project Contacts

Figure 4 – Project Contacts

Name	Role	E-Mail	Phone #
Customer			
James W. Edwards, Jr.	Business Administrator/Board Secretary	jedwards@brickschools.org	(732) 785-3000
Designated Representative			
Mr Sean	Custodian		(846) 240-2226
TRC Energy Services			
Moussa Traore	Auditor	mtraore@trcsolutions.com	(732) 855-0033

2.2 General Site Information

On February 13, 2017, TRC performed an energy audit at Brick Township High School located in Brick, New Jersey. TRC’s team met with Mr. Sean to review the facility operations and help focus our investigation on specific energy-using systems.

The 207,400 square-foot high school building is a two-story facility and is comprised of classrooms, offices, library, gymnasiums, locker rooms, weight room, auditorium, cafeterias, kitchens, computer rooms, band rooms, mechanical rooms, and storage areas. The building was constructed in two phases. The West Wing of the building was constructed in 1958 and the East Wing of the building was constructed in 1961. The two additions on the front and rear of the building were constructed in 1970. This addition included the library on the front of the building and classrooms on the rear of the building. The weight room adjacent to the east auxiliary gymnasium was added in 2002.



2.3 Building Occupancy

The building typical hours of operation is presented in the table below. The classes start at 7:00 AM and finish at 2:30 PM during the weekdays. The school operates on a 10-month schedule and the gymnasium and auditorium are used after classes and on weekends for sports and other events.

Figure 5 - Building Schedule

Building Name	Weekday/Weekend	Operating Schedule
Brick Township High School	Weekday	6:30 AM - 5:30 PM
Brick Township High School	Weekend	8:30 AM - 3:30 PM

2.4 Building Envelope

The foundation consists of cast-in-place concrete perimeter wall footings. Exterior walls are finished with brick masonry. The building has a flat roof covered with a multi-ply bituminous built-up membrane with a light stone covering. The roof is in fair condition. The roof of the auditorium is a barrel-style roof, found to be in good condition. Typical windows throughout the facility are operable single pane with aluminum frames. Exterior doors are constructed of metal and are in good condition.



2.5 On-Site Generation

Brick Township Board of Education implemented a solar energy project in 2017. Brick Township High School, along with other schools, was selected for the installation of photovoltaic (PV) arrays. The PV array for Brick Township High School was being installed during the site visit and will have a capacity of 97 kW.

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 by a combination of linear fluorescent fixtures with 32-Watt T8 and 40- Watt T12 lamps with both electronic and magnetic ballasts. There are also compact fluorescent lamps (CFL), incandescent lamps, and LED fixtures. Most of the linear fluorescent fixtures are 4-foot long with one or two lamps. The East and West Wing boiler rooms are lit with halogen incandescent and 23-Watt CFL lamps respectively. Small areas of the building are lit with 60-Watt incandescent or 2-Watt CFL lamps. The girls' and boys' gymnasiums are lit with 6-lamp, 4-foot long fluorescent fixtures with 32-Watt T8 lamps. The auxiliary gymnasium and the adjacent weight room, representing the 2002 addition to the building, are lit with linear LED lamps and LED pendant downlights respectively. The auditorium is lit with a combination of LED recessed downlights and fluorescent fixtures with 32-Watt T8 lamps. Lighting control is provided by both occupancy sensors and manual wall switches. The science and laboratory classes have occupancy sensors. Exit signs are primarily LED, however, there are some signs that use fluorescent lamps.

The building exterior lighting consists of a combination of incandescent, metal halide, and LED wall mounted area fixtures. The side walkway lights have 400-Watt metal halide lamps. Exterior lights are controlled with photocells.

Hot Water Heating System

The hot water system consists of five Harsco P-K MACH condensing boilers located in the East and West Wing boiler rooms. The boilers have an output capacity of 2,850 MBh and a nominal combustion efficiency of 95% each. Heating hot water is circulated throughout the West Wing of the building via two 20 hp pumps. These pumps are all located in the boiler room and are controlled by variable frequency drives (VFD). Heating hot water is circulated throughout the East Wing of the building via two 15 hp base mounted, end suction pumps, also located in the boiler room and controlled by VFDs. The boilers are configured in a variable flow distribution and have a full modulation sequencing control system. The boilers internal control system has an outside temperature set at 51°F and interior space temperature is set at 72°F. The boilers and the pumps are one year old and are in good condition.



The classrooms of the East and West Wings are all served by heating and ventilating units. These units are vintage Nesbitt models with hot water heating coils equipped with 2-way valves. Each of the two gymnasiums are served by two ceiling mounted, vintage Nesbitt heating and ventilating units. These units are equipped with hot water heating coils. The gymnasium units appear to be original to the building. The auxiliary gymnasium is also served by two ceiling mounted vintage Nesbitt heating and ventilating units.

Direct Expansion Air Conditioning System (DX)

The cooling system for the building consists of window units, split systems, heat pumps, and rooftop packaged units. The classrooms and other small offices are cooled with window units and split systems. Most of the window units are 3-ton Friedrich units and are three years old. The split systems vary in size from 1 to 5 tons and are 18 years old. The auditorium is served by one 27-ton Carrier packaged variable air volume (VAV) package heat pump. The unit is also equipped with a supplementary 26 kW electric resistance heating coil. The unit is 23 years old and has surpassed its useful service life as defined by ASHRAE. The main office and guidance offices are each served by a 5-ton split system. The outdoor condensing units of these systems are both Bryant models. These units

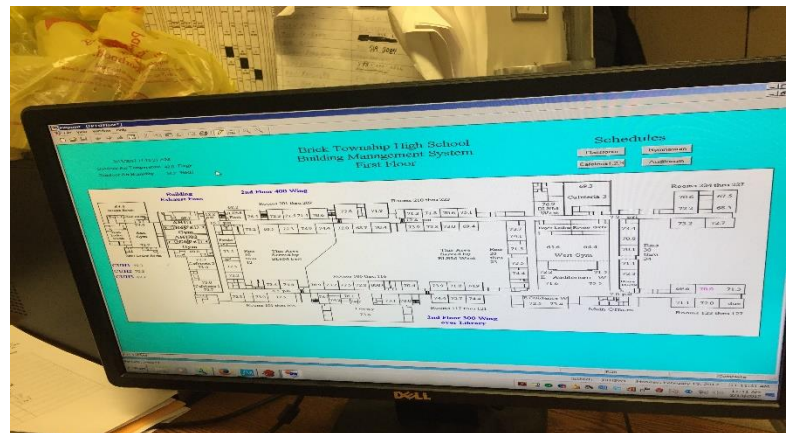


are approximately 11 years old and are still within their useful service life of 15 years. The weight room adjacent to the east gymnasium is served by a 20-ton AAON packaged rooftop unit with a natural gas fired heating section. This unit was installed in 2002 as part of the weight room addition. The West Wing faculty dining room is served by a cooling only, 4-ton Trane packaged rooftop unit. The unit is 11 years old and appeared in good condition. Cafeteria #3 is served by a 25-ton Trane packaged rooftop unit with a natural gas heating section. The unit has a single 10 hp supply fan and three 3 hp exhaust fans. The unit is two years-old and appeared in good condition.

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

Building Energy Management System (BEMS)

The facility's heating, ventilating, and air conditioning equipment is controlled with an Andover building energy management system (BEMS). The controllers operate the main heating and cooling components of the facility including the boilers, pumps, heating and ventilating units and exhaust fans.



Domestic Hot Water Heating System

Domestic hot water for the facility is provided by four natural gas fired water heaters. Three of the water heaters are Lochinvar condensing water heaters with an input rating of 285 MBh and a nominal efficiency of 96% each. Each water heater has a 116-gallon storage tank. Two of the three Lochinvar water heaters are located in the West Wing boiler room and serve the West Wing of the building, and the third water heater is located in the storage room of the boy's gymnasium and serves the East Wing. The three water heaters are one year old and appeared in good condition. The East Wing kitchen has one State non-condensing gas fired water heater with an input rating of 150 MBh and a 30-gallon storage tank. It is eight years old and is located in the kitchen's storage room.



Food Service & Refrigeration

The school houses two commercial kitchens and three cafeterias. The kitchens include gas ovens, one refrigerator, four walk-in coolers and one walk-in medium freezer. The kitchens are well maintained and the walk-in units appear to be in good condition.

Building Plug Loads

The building has approximately 185 computers with LCD monitors that are used daily, plus servers, 13 large photocopiers, and 24 printers. The computers, monitors, and printers seemed to be all recent models designed with power management software to reduce power when they sit idle for more than a few minutes. The building has seven vending machines all located in the common areas.



2.7 Water-Using Systems

There are several restrooms at this facility. A sampling of restrooms found that the 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 six 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

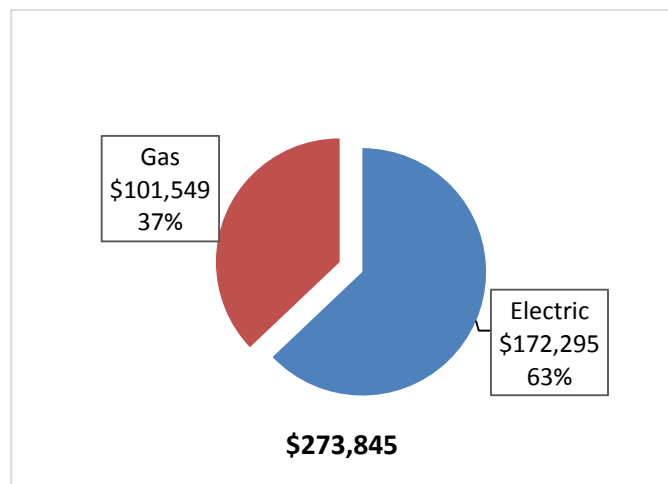
The following energy consumption and cost data is based on the last 12-month period of utility billing data that was provided for each utility. A profile of the annual energy consumption and energy cost of the facility was developed from this information.

Figure 6 - Utility Summary

Utility Summary for Brick Township High School		
Fuel	Usage	Cost
Electricity	1,526,981 kWh	\$172,295
Natural Gas	97,638 Therms	\$101,549
Total		\$273,845

The current annual energy cost for this facility is \$273,845 as shown in the chart below.

Figure 7 - Energy Cost Breakdown



3.2 Electricity Usage

Electricity is provided by JCP&L. The average electric cost over the past 12 months was \$0.113/kWh, which is the blended rate that includes energy supply, distribution, and other charges. This rate is used throughout the analyses in this report to assess energy costs and savings. The monthly electricity consumption and peak demand are shown in the chart below.

Figure 8 - Electric Usage & Demand

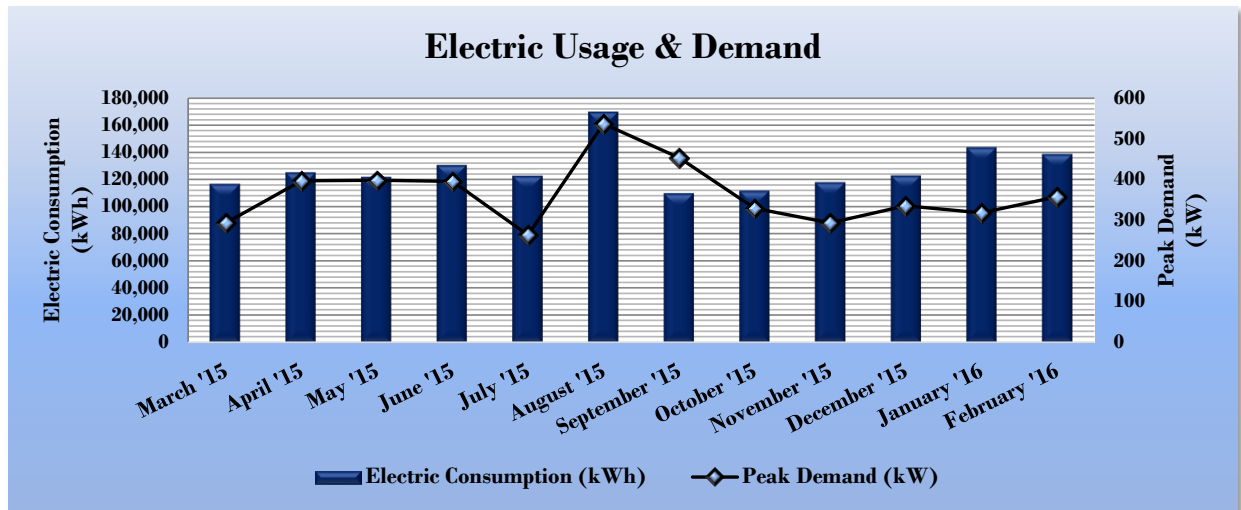


Figure 9 - Electric Usage & Demand

Electric Billing Data for Brick Township High School				
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Total Electric Cost
4/15/15	30	116,370	293	\$12,971
5/15/15	31	124,889	397	\$14,273
6/15/15	30	121,575	398	\$13,913
7/14/15	31	130,190	396	\$14,899
8/14/15	31	122,280	264	\$13,411
9/15/15	30	169,316	537	\$19,424
10/15/15	31	109,452	454	\$13,119
11/14/15	30	111,285	329	\$12,608
12/14/15	31	117,485	293	\$12,994
1/15/16	31	122,554	335	\$13,743
2/14/16	28	143,233	318	\$15,604
3/14/16	31	138,352	358	\$15,337
Totals	365	1,526,981	536.8	\$172,295
Annual	365	1,526,981	536.8	\$172,295

3.3 Natural Gas Usage

Natural gas is provided by NJ Natural Gas. The average gas cost for the past 12 months is \$1.040/therm, which is the blended rate used throughout the analyses in this report. The monthly gas consumption is shown in the chart below.

Figure 10 - Natural Gas Usage

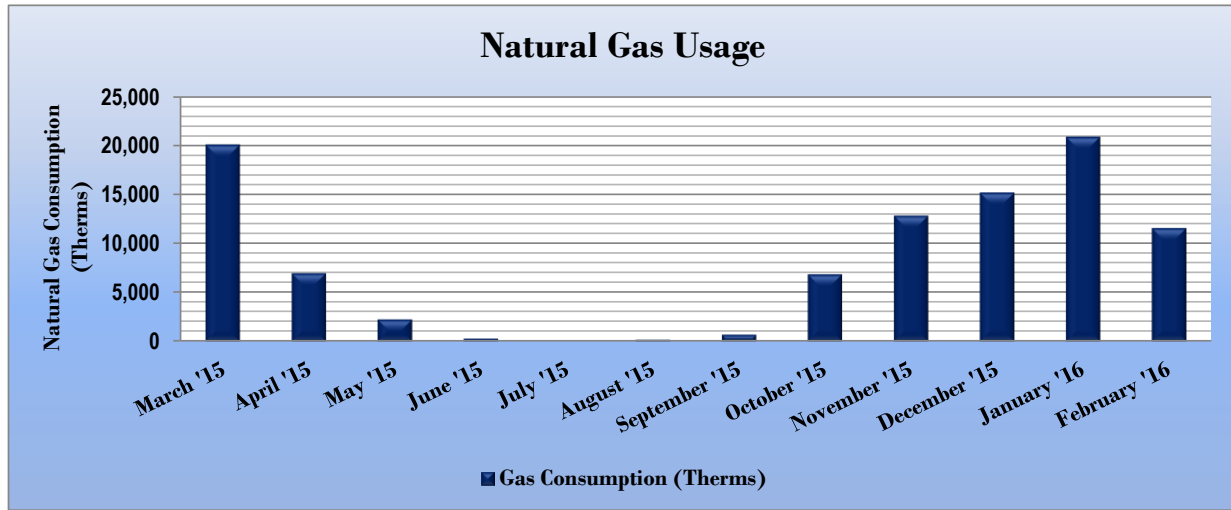


Figure 11 - Natural Gas Usage

Gas Billing Data for Brick Township High School			
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost
4/15/15	30	20,074	\$18,491
5/15/15	31	6,959	\$7,633
6/14/15	30	2,239	\$3,683
7/15/15	31	273	\$2,092
8/14/15	31	0	\$1,872
9/15/15	30	158	\$1,999
10/15/15	31	676	\$2,408
11/12/15	30	6,839	\$7,264
12/14/15	31	12,812	\$12,477
1/15/16	31	15,183	\$13,996
2/15/16	28	20,880	\$18,544
3/15/16	31	11,544	\$11,090
Totals	365	97,638	\$101,549
Annual	365	97,638	\$101,549

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		
	Brick Township High School	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft ²)	128.3	141.4
Site Energy Use Intensity (kBtu/ft ²)	72.2	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		
	Brick Township High School	National Median Building Type: School (K-12)
Source Energy Use Intensity (kBtu/ft ²)	109.3	141.4
Site Energy Use Intensity (kBtu/ft ²)	65.7	58.2

Many types of commercial buildings are also eligible to receive an ENERGY STAR® score. This score is a percentile ranking from 1 to 100. It compares your building’s energy performance to similar buildings nationwide. A score of 50 represents median energy performance, while a score of 75 means your building performs better than 75 percent of all similar buildings nationwide and may be eligible for ENERGY STAR® certification. This facility has a current score of 60.

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

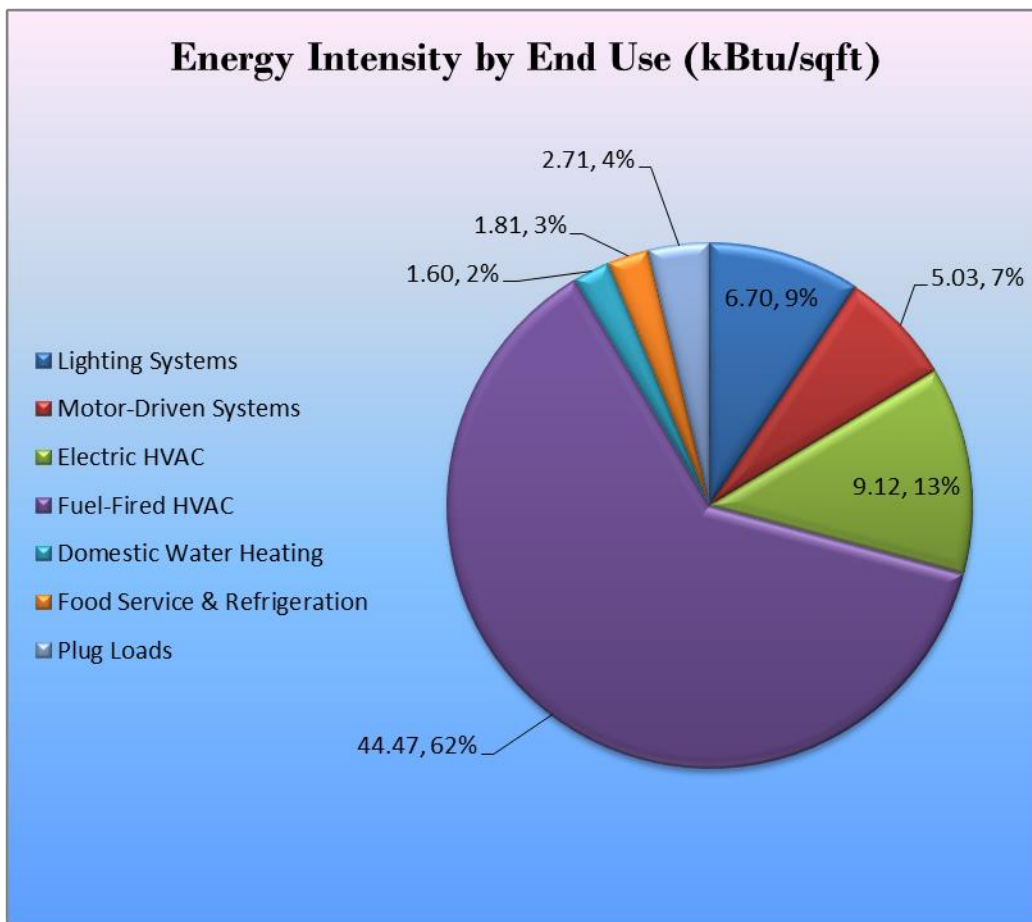
For more information on ENERGY STAR® certification go to: <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1>.

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 Brick Township High 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 Pay for Performance, or Direct Install incentive applications. Financial incentives for the ECMs identified in this report have been calculated based the NJCEP prescriptive SmartStart program. Some measures and proposed upgrade projects may be eligible for higher incentives than those shown below through other NJCEP programs as described in Section 8.

The following sections describe the evaluated measures.

4.1 Recommended ECMs

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

Figure 15 – Summary of Recommended ECMs

Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		283,591	58.6	0.0	0.0	\$31,998.63	\$203,953.45	\$21,640.00	\$182,313.45	5.7	285,574
ECM 1 Install LED Fixtures	Yes	17,733	6.8	0.0	0.0	\$2,000.90	\$30,740.40	\$4,205.00	\$26,535.40	13.3	17,857
ECM 2 Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	118,319	22.7	0.0	0.0	\$13,350.42	\$92,306.67	\$5,600.00	\$86,706.67	6.5	119,147
ECM 3 Retrofit Fixtures with LED Lamps	Yes	146,390	29.0	0.0	0.0	\$16,517.72	\$78,862.85	\$11,835.00	\$67,027.85	4.1	147,413
ECM 4 Install LED Exit Signs	Yes	1,148	0.1	0.0	0.0	\$129.58	\$2,043.55	\$0.00	\$2,043.55	15.8	1,156
Lighting Control Measures		32,417	6.2	0.0	0.0	\$3,657.76	\$29,328.00	\$3,800.00	\$25,528.00	7.0	32,644
ECM 5 Install Occupancy Sensor Lighting Controls	Yes	26,985	5.1	0.0	0.0	\$3,044.77	\$28,284.00	\$3,800.00	\$24,484.00	8.0	27,173
ECM 6 Install High/Low Lighting Controls	Yes	5,433	1.0	0.0	0.0	\$612.99	\$1,044.00	\$0.00	\$1,044.00	1.7	5,471
Motor Upgrades		3,362	0.5	0.0	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386
ECM 7 Premium Efficiency Motors	Yes	3,362	0.5	0.0	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386
Variable Frequency Drive (VFD) Measures		8,481	0.0	74.6	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276
ECM 8 Install VFDs on Single-Speed Kitchen Hoods	Yes	8,481	0.0	74.6	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276
Electric Unitary HVAC Measures		53,570	39.7	0.0	0.0	\$6,044.49	\$106,747.87	\$5,139.00	\$101,608.87	16.8	53,944
Install High Efficiency Electric AC	No	42,948	25.4	0.0	0.0	\$4,846.01	\$60,104.24	\$2,868.00	\$57,236.24	11.8	43,248
Install High Efficiency Heat Pumps	No	10,622	14.2	0.0	0.0	\$1,198.48	\$46,643.63	\$2,271.00	\$44,372.63	37.0	10,696
HVAC System Improvements		14,852	3.3	0.0	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956
ECM 9 Install Dual Enthalpy Outside Economizer Control	Yes	14,852	3.3	0.0	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956
Domestic Water Heating Upgrade		0	0.0	53.4	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257
ECM 10 Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	53.4	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257
Plug Load Equipment Control - Vending Machine		8,744	0.0	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805
ECM 11 Vending Machine Control	Yes	8,744	0.0	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805
TOTAL FOR PROPOSED MEASURES		351,447	68.5	128.0	128.0	\$40,986.91	\$240,954.89	\$26,840.00	\$214,114.89	5.2	368,897
TOTAL FOR ALL MEASURES		405,017	108.2	128.0	128.0	\$47,031.40	\$347,702.77	\$31,979.00	\$315,723.77	6.7	422,842

* - 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		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			283,591	58.6	0.0	0.0	\$31,998.63	\$203,953.45	\$21,640.00	\$182,313.45	5.7	285,574
ECM 1	Install LED Fixtures	Yes	17,733	6.8	0.0	0.0	\$2,000.90	\$30,740.40	\$4,205.00	\$26,535.40	13.3	17,857
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	118,319	22.7	0.0	0.0	\$13,350.42	\$92,306.67	\$5,600.00	\$86,706.67	6.5	119,147
ECM 3	Retrofit Fixtures with LED Lamps	Yes	146,390	29.0	0.0	0.0	\$16,517.72	\$78,862.85	\$11,835.00	\$67,027.85	4.1	147,413
ECM 4	Install LED Exit Signs	Yes	1,148	0.1	0.0	0.0	\$129.58	\$2,043.55	\$0.00	\$2,043.55	15.8	1,156

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 ₂ e Emissions Reduction (lbs)
Interior	0	0.0	0.0	\$0.00	\$0.00	\$0.00	\$0.00	0.0	0
Exterior	17,733	6.8	0.0	\$2,000.90	\$30,740.40	\$4,205.00	\$26,535.40	13.3	17,857

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 Fluorescent Fixtures with LED Lamps and Drivers

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)	Estimated Net Cost (\$)	Simple Payback Period (yrs)	CO ₂ e Emissions Reduction (lbs)
Interior	118,495	22.7	0.0	\$13,370.29	\$92,306.67	\$5,600.00	\$86,706.67	6.5	119,324
Exterior	0	0.0	0.0	\$0.00	\$0.00	\$0.00	\$0.00	0.0	0

Measure Description

We recommend retrofitting existing 40-Watt T12 fluorescent fixtures by removing fluorescent tubes and ballasts and replacing them with LEDs and LED drivers (if necessary), which are designed to be used in retrofitted fluorescent fixtures. The measure uses the existing fixture housing but replaces the rest of the components with more efficient lighting technology. This measure saves energy by installing LEDs which use less power than other lighting technologies yet provide equivalent lighting output for the space.

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

ECM 3: Retrofit Fixtures with LED Lamps

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)	Estimated Net Cost (\$)	Simple Payback Period (yrs)	CO ₂ e Emissions Reduction (lbs)
Interior	145,953	28.9	0.0	\$16,468.49	\$78,594.08	\$11,810.00	\$66,784.08	4.1	146,974
Exterior	436	0.2	0.0	\$49.24	\$268.77	\$25.00	\$243.77	5.0	439

Measure Description

We recommend retrofitting existing incandescent, halogen, and linear 32-Watt T8 lamps 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 10 times longer than many incandescent lamps.

ECM 4: 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 ₂ e Emissions Reduction (lbs)
Interior	1,148	0.1	0.0	\$129.58	\$2,043.55	\$0.00	\$2,043.55	15.8	1,156
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 ₂ e Emissions Reduction (lbs)
Lighting Control Measures		32,417	6.2	0.0	\$3,657.76	\$29,328.00	\$3,800.00	\$25,528.00	7.0	32,644
ECM 5	Install Occupancy Sensor Lighting Controls	26,985	5.1	0.0	\$3,044.77	\$28,284.00	\$3,800.00	\$24,484.00	8.0	27,173
ECM 6	Install High/Low Lighting Controls	5,433	1.0	0.0	\$612.99	\$1,044.00	\$0.00	\$1,044.00	1.7	5,471

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 5: 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 ₂ e Emissions Reduction (lbs)
26,985	5.1	0.0	\$3,044.77	\$28,284.00	\$3,800.00	\$24,484.00	8.0	27,173

Measure Description

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

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

ECM 6: 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 ₂ e Emissions Reduction (lbs)
5,433	1.0	0.0	\$612.99	\$1,044.00	\$0.00	\$1,044.00	1.7	5,471

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 hallways.

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

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

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

4.1.3 Motor Upgrades

Our recommendations for motor upgrade measures are summarized in Figure 18 below.

Figure 18 – Summary of Motor Upgrade ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Motor Upgrades		3,362	0.5	0.0	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386
ECM 7	Premium Efficiency Motors	3,362	0.5	0.0	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386

ECM 7: 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 ₂ e Emissions Reduction (lbs)
3,362	0.5	0.0	\$379.36	\$804.84	\$0.00	\$804.84	2.1	3,386

Measure Description

We recommend replacing the kitchen hood 3 hp standard efficiency exhaust fan motor with IHP 2014 efficiency motor in conjunction with installing a VFD (see Section 4.1.4). Our evaluation assumes that existing motors will be replaced with motors of equivalent size and type. Although occasionally additional savings can be achieved by downsizing motors to better meet the motor’s current load requirements. The base case motor efficiencies are estimated from nameplate information and our best estimates of motor run hours. Efficiencies of proposed motor upgrades are obtained from the New Jersey’s Clean Energy Program Protocols to Measure Resource Savings (2016). Savings are based on the difference between baseline and proposed efficiencies and the assumed annual operating hours.

4.1.4 Variable Frequency Drive Measures

Our recommendations for variable frequency drive (VFD) measures are summarized in Figure 19 below.

Figure 19 – 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 ₂ e Emissions Reduction (lbs)
Variable Frequency Drive (VFD) Measures		8,481	0.0	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	8,481	0.0	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276

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 ₂ e Emissions Reduction (lbs)
8,481	0.0	74.6	\$1,732.92	\$3,007.65	\$900.00	\$2,107.65	1.2	17,276

Measure Description

We recommend installing a variable frequency drive (VFD) and sensors to control the kitchen hood fan motor. The air flow of the hood is varied based on two 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 20 below.

Figure 20 - 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 ₂ e Emissions Reduction (lbs)
HVAC System Improvements	14,852	3.3	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956
ECM 9 Install Dual Enthalpy Outside Economizer Control	14,852	3.3	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956

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 ₂ e Emissions Reduction (lbs)
14,852	3.3	0.0	\$1,675.81	\$2,000.00	\$500.00	\$1,500.00	0.9	14,956

Measure Description

Dual enthalpy economizers are used 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 21 below.

Figure 21 - Summary of Domestic Water Heating ECMs

Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Domestic Water Heating Upgrade	0	0.0	53.4	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257
ECM 10 Install Low-Flow Domestic Hot Water Devices	0	0.0	53.4	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257

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 ₂ e Emissions Reduction (lbs)
0	0.0	53.4	\$555.79	\$250.95	\$0.00	\$250.95	0.5	6,257

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

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

Figure 22 - Summary of Plug Load Equipment Control ECMs

Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Plug Load Equipment Control - Vending Machine	8,744	0.0	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805
ECM 11 Vending Machine Control	8,744	0.0	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805

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 ₂ e Emissions Reduction (lbs)
8,744	0.0	0.0	\$986.64	\$1,610.00	\$0.00	\$1,610.00	1.6	8,805

Measure Description

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

4.2 ECMs Evaluated But Not Recommended

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

Figure 23 – Summary of Measures Evaluated, But Not Recommended

Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Electric Unitary HVAC Measures	53,570	39.7	0.0	\$6,044.49	\$106,747.87	\$5,139.00	\$101,608.87	16.8	53,944
Install High Efficiency Electric AC	42,948	25.4	0.0	\$4,846.01	\$60,104.24	\$2,868.00	\$57,236.24	11.8	43,248
Install High Efficiency Heat Pumps	10,622	14.2	0.0	\$1,198.48	\$46,643.63	\$2,271.00	\$44,372.63	37.0	10,696
TOTALS	53,570	39.7	0.0	\$6,044.49	\$106,747.87	\$5,139.00	\$101,608.87	16.8	53,944

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

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

Install High Efficiency 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 ₂ e Emissions Reduction (lbs)
42,948	25.4	0.0	\$4,846.01	\$60,104.24	\$2,868.00	\$57,236.24	11.8	43,248

Measure Description

We evaluated replacing standard efficiency packaged air conditioning units with high efficiency packaged 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 overall simple payback for this project is nearly twelve years which is more than the recommended ten-year threshold.

Install High Efficiency Heat 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 ₂ e Emissions Reduction (lbs)
10,622	14.2	0.0	\$1,198.48	\$46,643.63	\$2,271.00	\$44,372.63	37.0	10,696

Measure Description

We evaluated replacing standard efficiency heat pumps with high efficiency heat pumps. 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 and a higher HPSF rating indicates more efficient heating mode. 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 heating and cooling loads, and the estimated annual operating hours.

Reasons for not Recommending

The simple payback for this project is 37 years which is more than the typical useful life of 15 years for heat pumps. Therefore, this measure is not recommended.

5 ENERGY EFFICIENT BEST 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. The recommendations below are for informational purposes only and do not reflect actual efforts actively being performed by Brick Township Board of Education.

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.

Turn Off Unneeded Motors

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

Reduce Motor Short Cycling

Frequent stopping and starting of motors subject 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.

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 5-10°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 Proper Boiler Maintenance

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

Perform Proper Furnace Maintenance

Preventative furnace maintenance can extend the life of the system, maintain energy efficiency, and ensure safe operation. Following the manufacturer's instructions, a yearly tune-up should include tasks such as checking for gas / carbon monoxide leaks; changing the air and fuel filters; checking components for cracks, corrosion, dirt, or debris build-up; ensuring the ignition system is working properly; testing and adjusting operation and safety controls; inspecting the electrical connections; and ensuring proper lubrication for motors and bearings.

Perform Proper Water Heater Maintenance

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

Plug Load Controls

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

Water Conservation

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

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

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

6 ON-SITE GENERATION MEASURES

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

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

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

6.1 Photovoltaic

Sunlight can be converted into electricity using photovoltaics (PV) modules. Modules are racked together into an array that produces direct current (DC) electricity. The DC 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.



The school district was in the process of installing a 97 kW PV array at Brick Township High School during the site visit.

For more information on solar PV technology and commercial solar markets in New Jersey 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.

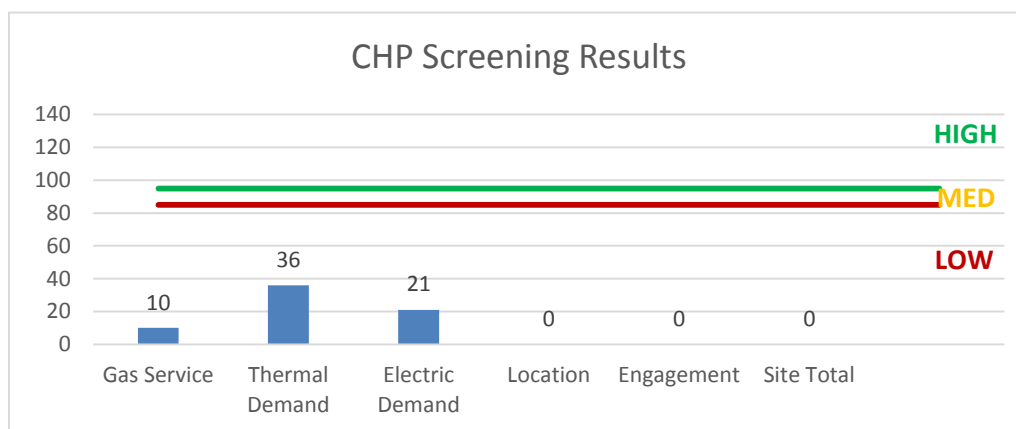
CHP systems are typically used to produce a portion of the electric power used onsite by a facility, with the balance of electric power needs supplied by grid purchases. The heat is used to supplement (or supplant) existing boilers for the purpose of space heating and/or domestic hot water heating. Waste 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 low 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 24 - 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.

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 this building is not a good candidate for DR.

8 PROJECT FUNDING / INCENTIVES

The NJCEP is able to provide the incentive programs described below, and other benefits to ratepayers, because of the Societal Benefits Charge (SBC) Fund. The SBC was created by the State of New Jersey’s Electricity Restructuring Law (1999), which requires all customers of investor-owned electric and gas utilities to pay a surcharge on their monthly energy bills. As a customer of a state-regulated electric or gas utility and therefore a contributor to the fund your organization is eligible to participate in the LGEA program and also eligible to receive incentive payment for qualifying energy efficiency measures. Also available through the NJBPU are some alternative financing programs described later in this section. Please refer to Figure 25 for a list of the eligible programs identified for each recommended ECM.

Figure 25 - 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					
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	x					
ECM 3	Retrofit Fixtures with LED Lamps	x					
ECM 4	Install LED Exit Signs						
ECM 5	Install Occupancy Sensor Lighting Controls	x					
ECM 6	Install High/Low Lighting Controls						
ECM 7	Premium Efficiency Motors						
ECM 8	Install VFDs on Single-Speed Kitchen Hoods	x					
ECM 9	Install Dual Enthalpy Outside Economizer Control	x					
ECM 10	Install Low-Flow Domestic Hot Water Devices						
ECM 11	Vending Machine Control						

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

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

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

8.1 SmartStart

Overview

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

Equipment with Prescriptive Incentives Currently Available:

Electric Chillers

Electric Unitary HVAC

Gas Cooling

Gas Heating

Gas Water Heating

Ground Source Heat Pumps

Variable Frequency Drives

Lighting

Lighting Controls

Refrigeration Doors

Refrigeration Controls

Refrigerator/Freezer Motors

Food Service Equipment

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

Incentives

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

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

How to Participate

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

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

8.2 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

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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
West Wing Boiler Room	6	Halogen Incandescent PAR38 70W	Wall Switch	70	3,000	Relamp	No	6	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.24	1,263	0.0	\$142.48	\$322.52	\$30.00	2.05
East Wing Wing Boiler Room	3	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	3	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.03	145	0.0	\$16.35	\$161.26	\$0.00	9.86
East Wing Wing Boiler Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Cafeteria	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
Cafeteria	27	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	27	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.74	3,884	0.0	\$438.29	\$1,811.50	\$310.00	3.43
Kitchen	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.17	911	0.0	\$102.77	\$468.00	\$80.00	3.78
Kitchen	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Kitchen	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Walk-in Freezer	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Walk-in Cooler	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Head Custodian Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Room 224	28	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.77	4,028	0.0	\$454.52	\$2,178.00	\$350.00	4.02
Room 224	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.12	618	0.0	\$69.78	\$490.00	\$25.00	6.66
Room 225	18	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	18	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.42	2,226	0.0	\$251.20	\$2,034.00	\$125.00	7.60
Room 225	9	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.13	678	0.0	\$76.55	\$593.10	\$80.00	6.70
Room 226	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Room 226	26	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	26	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.61	3,216	0.0	\$362.84	\$3,088.00	\$200.00	7.96
Room 227	21	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	21	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.30	1,583	0.0	\$178.62	\$1,293.90	\$175.00	6.26
Custodian Closet	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Boys Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
School Base Office	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	3,000	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.14	760	0.0	\$85.72	\$401.40	\$80.00	3.75
Girls Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
Assistant Principal	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$403.20	\$60.00	5.04
Boys Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
Girls Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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
Custodian Closet	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
West Wing Office	4	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	495	0.0	\$55.82	\$508.00	\$40.00	8.38
West Wing Office	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.01	60	0.0	\$6.81	\$35.90	\$5.00	4.54
Room 216	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Romm 216	9	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.21	1,113	0.0	\$125.60	\$1,152.00	\$80.00	8.54
Romm 217	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Romm 217	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Romm 218	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Romm 218	9	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.21	1,113	0.0	\$125.60	\$1,152.00	\$80.00	8.54
Romm 219	9	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.21	1,113	0.0	\$125.60	\$1,152.00	\$80.00	8.54
Romm 219	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Romm 220	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$557.20	\$75.00	7.09
Romm 220	6	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.12	652	0.0	\$73.57	\$588.00	\$30.00	7.58
Romm 222	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Romm 222	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Romm 223	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Romm 223	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Closet	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
West Wing Hallway	62	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	62	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	2,100	1.69	8,920	0.0	\$1,006.44	\$3,975.00	\$620.00	3.33
West Wing Hallway	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
West Wing Hallway	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Storage	2	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.09	467	0.0	\$52.71	\$350.00	\$20.00	6.26
Room 30	7	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.16	866	0.0	\$97.69	\$956.00	\$70.00	9.07
Room 30	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.10	528	0.0	\$59.54	\$251.30	\$35.00	3.63
Room 31	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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 31	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 32	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 32	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 33	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 33	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 34	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 34	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Storage	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Nurse Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.03	164	0.0	\$18.49	\$35.90	\$5.00	1.67
West Wing Nurse Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
West Wing Nurse Office	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.12	618	0.0	\$69.78	\$606.00	\$45.00	8.04
West Wing Nurse Office	2	Compact Fluorescent: 2X13W 2-pin	Wall Switch	26	3,000	Relamp	No	2	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	117	0.0	\$13.24	\$127.30	\$0.00	9.62
Room 127	21	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	21	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.49	2,597	0.0	\$293.07	\$2,328.00	\$140.00	7.47
Room 123	19	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	19	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.45	2,350	0.0	\$265.16	\$2,132.00	\$130.00	7.55
Room 123	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 124	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.03	181	0.0	\$20.44	\$107.70	\$15.00	4.54
Room 124	18	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	18	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.42	2,226	0.0	\$251.20	\$2,034.00	\$125.00	7.60
Room 125	18	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	18	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.42	2,226	0.0	\$251.20	\$2,034.00	\$125.00	7.60
Custodian Closet	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Girls Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
Boys Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
Principal Office	5	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.14	719	0.0	\$81.16	\$408.50	\$70.00	4.17
Main Office	11	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	11	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.13	664	0.0	\$74.94	\$394.90	\$55.00	4.54
Main Office	23	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	23	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.54	2,845	0.0	\$320.98	\$2,486.00	\$155.00	7.26
Guidance Room	13	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	13	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.27	1,413	0.0	\$159.41	\$1,274.00	\$65.00	7.58

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Guidance Room	33	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	33	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.47	2,488	0.0	\$280.69	\$1,416.70	\$205.00	4.32
Faculty Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Faculty Room	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Faculty Room	4	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.18	934	0.0	\$105.42	\$584.00	\$60.00	4.97
Faculty Room	1	Compact Fluorescent 2X13W 2-pin	Wall Switch	26	3,000	Relamp	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	59	0.0	\$6.62	\$63.65	\$0.00	9.62
Storage	2	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	2	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.07	352	0.0	\$39.71	\$127.30	\$10.00	2.95
Room 20	14	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	14	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.33	1,732	0.0	\$195.38	\$1,642.00	\$105.00	7.87
Room 21	16	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	16	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.38	1,979	0.0	\$223.29	\$1,838.00	\$115.00	7.72
Room 22	14	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	14	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.33	1,732	0.0	\$195.38	\$1,642.00	\$105.00	7.87
Room 23	18	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	18	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.42	2,226	0.0	\$251.20	\$2,034.00	\$125.00	7.60
Room 23	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Storage	2	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.04	217	0.0	\$24.52	\$196.00	\$10.00	7.58
Boys Restroom	12	Compact Fluorescent: 2X13W 2-pin	Wall Switch	26	3,000	Relamp	Yes	12	LED - Fixtures: Downlight Solid State Retrofit	Occupancy Sensor	9	2,100	0.15	816	0.0	\$92.02	\$1,033.80	\$35.00	10.85
Boys Locker Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.06	342	0.0	\$38.54	\$175.50	\$30.00	3.78
Boys Locker Room	8	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	Yes	8	LED Screw-In Lamps: LED Screw-in	Occupancy Sensor	9	2,100	0.28	1,482	0.0	\$167.23	\$700.02	\$75.00	3.74
Receiving Room	4	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	495	0.0	\$55.82	\$508.00	\$40.00	8.38
Main Server Room	4	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	495	0.0	\$55.82	\$508.00	\$40.00	8.38
Office	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
East Wing Hallway	70	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	70	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	2,100	1.91	10,071	0.0	\$1,136.30	\$4,443.00	\$700.00	3.29
East Wing Hallway	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.07	362	0.0	\$40.87	\$215.40	\$30.00	4.54
East Wing Hallway	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Child Study Room	9	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.21	1,113	0.0	\$125.60	\$998.00	\$65.00	7.43
Custodian Closet	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Boys Restroom	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
Copy Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$403.20	\$60.00	5.04
Conference Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	452	0.0	\$51.03	\$331.40	\$50.00	5.51
Custodian Closet	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Women Faculty Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.08	432	0.0	\$48.70	\$445.50	\$65.00	7.81
Men Faculty Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.08	432	0.0	\$48.70	\$445.50	\$65.00	7.81
Room 106	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Room 106	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 108	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 108	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Room 110	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 110	8	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.19	989	0.0	\$111.64	\$1,054.00	\$75.00	8.77
Room 112	8	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.19	989	0.0	\$111.64	\$1,054.00	\$75.00	8.77
Room 112	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 114	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$557.20	\$75.00	7.09
Room 114	4	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.08	435	0.0	\$49.05	\$392.00	\$20.00	7.58
Room 115	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$557.20	\$75.00	7.09
Room 116	12	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.28	1,484	0.0	\$167.47	\$1,446.00	\$95.00	8.07
Room 117	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 117	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 118	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.09	483	0.0	\$54.50	\$287.20	\$40.00	4.54
Room 118	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 119	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 119	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 120	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.09	483	0.0	\$54.50	\$287.20	\$40.00	4.54

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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 120	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 121	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 121	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Library	37	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	37	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.42	2,234	0.0	\$252.06	\$1,328.30	\$185.00	4.54
Library	39	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	39	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	1.07	5,611	0.0	\$633.08	\$3,091.50	\$495.00	4.10
Library	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
Library Office A	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	452	0.0	\$51.03	\$331.40	\$50.00	5.51
Library Office B	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	452	0.0	\$51.03	\$331.40	\$50.00	5.51
Library Office C	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	452	0.0	\$51.03	\$331.40	\$50.00	5.51
Lunch Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.09	452	0.0	\$51.03	\$331.40	\$50.00	5.51
Girls Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.01	60	0.0	\$6.81	\$35.90	\$5.00	4.54
Girls Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Boys Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Boys Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.01	60	0.0	\$6.81	\$35.90	\$5.00	4.54
Video Production Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$403.20	\$60.00	5.04
Supervisor Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.11	575	0.0	\$64.93	\$350.00	\$60.00	4.47
Bookkeeper Room	4	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.36	1,869	0.0	\$210.83	\$763.33	\$100.00	3.15
Closet	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
East Wing 2nd Floor Hallway	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	2,100	0.41	2,158	0.0	\$243.49	\$993.50	\$150.00	3.46
East Wing 2nd Floor Hallway	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
Stairwell	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Stairwell	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Boys Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.08	432	0.0	\$48.70	\$445.50	\$65.00	7.81
Girls Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.08	432	0.0	\$48.70	\$445.50	\$65.00	7.81

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.01	60	0.0	\$6.81	\$35.90	\$5.00	4.54
Storage	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Custodian Closet	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Room 300	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,083	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.10	377	0.0	\$42.57	\$490.00	\$25.00	10.92
Room 300	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.05	168	0.0	\$18.92	\$143.60	\$20.00	6.53
Room 302	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.05	168	0.0	\$18.92	\$143.60	\$20.00	6.53
Room 302	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,083	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.10	377	0.0	\$42.57	\$490.00	\$25.00	10.92
Room 304	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,083	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.10	377	0.0	\$42.57	\$490.00	\$25.00	10.92
Room 304	4	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Occupancy Sensor	53	2,083	Relamp	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,083	0.07	264	0.0	\$29.73	\$246.80	\$60.00	6.28
Room 305	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,083	Relamp	No	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.37	1,366	0.0	\$154.08	\$430.80	\$60.00	2.41
Room 305	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.06	210	0.0	\$23.65	\$179.50	\$25.00	6.53
Room 305B	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.03	126	0.0	\$14.19	\$107.70	\$15.00	6.53
Room 306	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.05	168	0.0	\$18.92	\$143.60	\$20.00	6.53
Room 306	8	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,083	Relamp & Reballast	No	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.17	604	0.0	\$68.12	\$784.00	\$40.00	10.92
Room 307	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,083	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,083	0.26	949	0.0	\$107.04	\$702.00	\$120.00	5.44
Room 307	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.06	210	0.0	\$23.65	\$179.50	\$25.00	6.53
Room 308	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.05	168	0.0	\$18.92	\$143.60	\$20.00	6.53
Room 308	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,083	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.10	377	0.0	\$42.57	\$490.00	\$25.00	10.92
Room 301	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.06	210	0.0	\$23.65	\$179.50	\$25.00	6.53
Room 301	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,083	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,083	0.26	949	0.0	\$107.04	\$702.00	\$120.00	5.44
Room 301A	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.06	210	0.0	\$23.65	\$179.50	\$25.00	6.53
Room 303	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,083	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,083	0.06	210	0.0	\$23.65	\$179.50	\$25.00	6.53
Room 303	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,083	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,083	0.26	949	0.0	\$107.04	\$702.00	\$120.00	5.44
Stairwell 2	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Stairwell 2	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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
Mechanical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Mechanical Room	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Cafeteria 1	20	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	3,000	Relamp	Yes	20	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.96	5,065	0.0	\$571.46	\$2,134.67	\$440.00	2.97
Cafeteria 1	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	\$13.64	\$215.11	\$0.00	15.77
Cafeteria 2	20	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	3,000	Relamp	Yes	20	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.96	5,065	0.0	\$571.46	\$2,134.67	\$440.00	2.97
Cafeteria 2	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	\$13.64	\$215.11	\$0.00	15.77
Kitchen	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Kitchen	19	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	19	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.39	2,065	0.0	\$232.98	\$1,862.00	\$95.00	7.58
Kitchen	10	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	10	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.11	604	0.0	\$68.12	\$359.00	\$50.00	4.54
Walk-in Cooler	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Kitchen Office	3	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	326	0.0	\$36.79	\$294.00	\$15.00	7.58
Storage	2	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	2	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.07	352	0.0	\$39.71	\$107.51	\$10.00	2.46
Kitchen Restroom	2	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	2	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	97	0.0	\$10.90	\$107.51	\$0.00	9.86
Boys Gymnasium	24	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	3,000	Relamp	No	24	LED - Linear Tubes: (6) 4' Lamps	Wall Switch	87	3,000	1.40	7,369	0.0	\$831.49	\$3,221.36	\$720.00	3.01
Boys Gymnasium	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	\$27.28	\$430.22	\$0.00	15.77
Gymn Entrance	3	Linear Fluorescent - T12: 4' T12 (40W) - 3L	Wall Switch	127	3,000	Relamp & Reballast	No	3	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,000	0.16	864	0.0	\$97.51	\$394.50	\$45.00	3.58
Gymn Entrance	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	3,000	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	3,000	0.07	386	0.0	\$43.60	\$190.27	\$40.00	3.45
Gymn Entrance	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	\$13.64	\$215.11	\$0.00	15.77
Auxiliary Gymnasium	8	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	3,000	None	No	8	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	3,000	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Auxiliary Gymnasium	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	\$27.28	\$430.22	\$0.00	15.77
Gymn Office	2	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.04	217	0.0	\$24.52	\$196.00	\$10.00	7.58
Gymn Office	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Boys Locker Room 1	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.03	181	0.0	\$20.44	\$107.70	\$15.00	4.54
Boys Locker Room 1	1	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	109	0.0	\$12.26	\$98.00	\$5.00	7.58
Boys Locker Room 1	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Weigh Room	15	LED - Fixtures: Downlight Pendant	Wall Switch	35	3,000	None	No	15	LED - Fixtures: Downlight Pendant	Wall Switch	35	3,000	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Weigh 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	\$13.64	\$215.11	\$0.00	15.77
Boys Locker Room 2	14	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.38	2,014	0.0	\$227.26	\$935.00	\$140.00	3.50
Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Locker Room Entrance	6	Linear Fluorescent - T12: 4' T12 (40W) - 3L	Wall Switch	127	3,000	Relamp & Reballast	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,100	0.38	1,999	0.0	\$225.51	\$905.00	\$110.00	3.53
Locker Room Entrance	1	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	204	0.0	\$22.97	\$117.00	\$10.00	4.66
Locker Room Entrance	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Locker Room Entrance	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	\$6.82	\$107.56	\$0.00	15.77
Office	6	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.14	742	0.0	\$83.73	\$704.00	\$50.00	7.81
Office	1	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	204	0.0	\$22.97	\$117.00	\$10.00	4.66
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Restroom	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Shower Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Girls Locker Room Entrance	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.08	432	0.0	\$48.70	\$291.50	\$50.00	4.96
Girls Locker Room Entrance	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	\$6.82	\$107.56	\$0.00	15.77
Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Restroom	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Instructor Office (Girls)	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Instructor Office (Girls)	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$63.65	\$0.00	11.68
Girls Locker Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.03	181	0.0	\$20.44	\$107.70	\$15.00	4.54
Girls Locker Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.22	1,151	0.0	\$129.86	\$584.00	\$80.00	3.88
Girls 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	\$6.82	\$107.56	\$0.00	15.77
Main Gym Locker Room	11	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.30	1,583	0.0	\$178.56	\$759.50	\$130.00	3.53

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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
Main Gym Locker Room	2	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	2	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	97	0.0	\$10.90	\$107.51	\$0.00	9.86
Main Gym Locker Room	1	Compact Fluorescent: 2X13W 2-pin	Wall Switch	26	3,000	Relamp	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	59	0.0	\$6.62	\$63.65	\$0.00	9.62
Storage	2	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	2	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	97	0.0	\$10.90	\$107.51	\$0.00	9.86
Locker Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.17	911	0.0	\$102.77	\$468.00	\$80.00	3.78
Locker Room	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Instructor Office (Boys)	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Instructor Office (Boys)	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$63.65	\$0.00	11.68
Room 210	23	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	23	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.54	2,845	0.0	\$320.98	\$2,794.00	\$185.00	8.13
Room 210	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 210	2	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	2	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.07	352	0.0	\$39.71	\$107.51	\$10.00	2.46
Room 212	18	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	18	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.42	2,226	0.0	\$251.20	\$2,034.00	\$125.00	7.60
Room 212	10	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	10	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.11	604	0.0	\$68.12	\$359.00	\$50.00	4.54
Room 215	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 215	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 213	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 213	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Storage	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Storage	1	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	204	0.0	\$22.97	\$117.00	\$10.00	4.66
Storage	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Room 201	12	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	1.07	5,606	0.0	\$632.50	\$2,212.00	\$275.00	3.06
Room 202	12	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	Yes	12	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	1.07	5,606	0.0	\$632.50	\$2,212.00	\$275.00	3.06
Room 203	10	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.89	4,671	0.0	\$527.08	\$1,888.33	\$235.00	3.14
Room 204	9	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.80	4,204	0.0	\$474.37	\$1,726.50	\$215.00	3.19
Room 205	9	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.40	2,102	0.0	\$237.19	\$1,323.00	\$125.00	5.05
Room 206	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	10	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.21	1,087	0.0	\$122.62	\$980.00	\$50.00	7.58

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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 206	23	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	23	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.33	1,734	0.0	\$195.63	\$1,365.70	\$185.00	6.04
Room 207	9	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.40	2,102	0.0	\$237.19	\$1,323.00	\$125.00	5.05
Room 208	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.25	1,295	0.0	\$146.10	\$796.50	\$125.00	4.60
Room 209	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.25	1,295	0.0	\$146.10	\$796.50	\$125.00	4.60
Room 211	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 211	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Boys Restroom	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	3,000	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	3,000	0.02	110	0.0	\$12.46	\$96.40	\$20.00	6.13
Boys Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	3,000	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.14	760	0.0	\$85.72	\$555.40	\$95.00	5.37
Girls Restroom	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	3,000	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	3,000	0.02	110	0.0	\$12.46	\$96.40	\$20.00	6.13
Girls Restroom	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	3,000	Relamp	Yes	3	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.14	760	0.0	\$85.72	\$555.40	\$95.00	5.37
Storage	2	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	2	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	97	0.0	\$10.90	\$107.51	\$0.00	9.86
Storage	3	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	3	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.10	528	0.0	\$59.56	\$161.26	\$15.00	2.46
East Nurse Office	4	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	Yes	4	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,100	0.36	1,869	0.0	\$210.83	\$763.33	\$100.00	3.15
East Nurse Office	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Back Entrance	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.09	455	0.0	\$51.38	\$234.00	\$40.00	3.78
Back Entrance	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Gym Area Hallway	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	18	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	2,100	0.49	2,590	0.0	\$292.19	\$1,169.00	\$180.00	3.38
Main East Wing Entrance	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.17	911	0.0	\$102.77	\$468.00	\$80.00	3.78
Main East Wing Entrance	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
East Office	19	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	Yes	19	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,100	0.84	4,438	0.0	\$500.73	\$2,339.00	\$210.00	4.25
East Office Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	3,000	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	3,000	0.01	55	0.0	\$6.23	\$48.20	\$10.00	6.13
East Office Restroom	2	Compact Fluorescent: 2X13W 2-pin	Wall Switch	26	3,000	Relamp	No	2	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	117	0.0	\$13.24	\$127.30	\$0.00	9.62
Room 103	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.26	1,028	0.0	\$115.96	\$702.00	\$120.00	5.02
Room 103	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,257	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,257	0.06	227	0.0	\$25.62	\$179.50	\$25.00	6.03
Room 104	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.26	1,028	0.0	\$115.96	\$702.00	\$120.00	5.02

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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 104	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,257	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,257	0.06	227	0.0	\$25.62	\$179.50	\$25.00	6.03
Room 105	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.26	1,028	0.0	\$115.96	\$702.00	\$120.00	5.02
Room 105	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,257	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,257	0.06	227	0.0	\$25.62	\$179.50	\$25.00	6.03
Room 102	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.26	1,028	0.0	\$115.96	\$702.00	\$120.00	5.02
Room 102	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,257	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,257	0.06	227	0.0	\$25.62	\$179.50	\$25.00	6.03
Room 100	2	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.04	217	0.0	\$24.52	\$196.00	\$10.00	7.58
Room 100	8	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.11	603	0.0	\$68.05	\$557.20	\$75.00	7.09
Room 100	2	Linear Fluorescent - T12: 4' T12 (40W) - 4L	Wall Switch	176	3,000	Relamp & Reballast	No	2	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	3,000	0.15	814	0.0	\$91.87	\$323.67	\$40.00	3.09
Room 100	2	Linear Fluorescent - T12: 4' T12 (40W) - 2L	Wall Switch	88	3,000	Relamp & Reballast	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.08	407	0.0	\$45.93	\$234.00	\$20.00	4.66
Room 10	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 10	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 11	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.26	1,028	0.0	\$115.96	\$702.00	\$120.00	5.02
Room 11	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,257	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,257	0.06	227	0.0	\$25.62	\$179.50	\$25.00	6.03
Room 11A	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.06	257	0.0	\$28.99	\$175.50	\$30.00	5.02
Room 11B	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.04	171	0.0	\$19.33	\$117.00	\$20.00	5.02
Room 12	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,257	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,257	0.26	1,028	0.0	\$115.96	\$702.00	\$120.00	5.02
Room 12	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,257	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,257	0.06	227	0.0	\$25.62	\$179.50	\$25.00	6.03
Faculty Room	11	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	11	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.16	829	0.0	\$93.56	\$510.90	\$75.00	4.66
Restroom	2	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.04	217	0.0	\$24.52	\$196.00	\$10.00	7.58
Electrical Closet	4	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	4	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.04	193	0.0	\$21.80	\$215.01	\$0.00	9.86
Stairwell 5	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Stairwell 5	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
Stairwell 5	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
2nd Floor Room 400	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,096.00	\$70.00	7.35
2nd Floor Room 400	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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 401	7	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.16	866	0.0	\$97.69	\$956.00	\$70.00	9.07
Room 401	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 402	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 402	8	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.19	989	0.0	\$111.64	\$1,054.00	\$75.00	8.77
Room 403	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 403	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Boys Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Boys Restroom	2	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	2	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	97	0.0	\$10.90	\$107.51	\$0.00	9.86
Girls Restroom	2	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	2	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.02	97	0.0	\$10.90	\$107.51	\$0.00	9.86
Girls Restroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Room 405	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 405	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 407	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 407	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Room 408	6	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.12	652	0.0	\$73.57	\$588.00	\$30.00	7.58
Room 408	12	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.17	905	0.0	\$102.07	\$700.80	\$95.00	5.94
Room 406	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 406	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.06	302	0.0	\$34.06	\$179.50	\$25.00	4.54
Stairwell 4	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Stairwell 4	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Room 409	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.10	543	0.0	\$61.31	\$490.00	\$25.00	7.58
Room 409	15	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	15	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.21	1,131	0.0	\$127.59	\$808.50	\$110.00	5.47
Room 411	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.10	543	0.0	\$61.31	\$490.00	\$25.00	7.58
Room 411	13	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	13	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.19	980	0.0	\$110.57	\$736.70	\$100.00	5.76
Room 410	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.10	543	0.0	\$61.31	\$490.00	\$25.00	7.58

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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 410	10	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.14	754	0.0	\$85.06	\$629.00	\$85.00	6.40
Room 413	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.10	543	0.0	\$61.31	\$490.00	\$25.00	7.58
Room 413	10	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.14	754	0.0	\$85.06	\$629.00	\$85.00	6.40
Room 412	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.10	543	0.0	\$61.31	\$490.00	\$25.00	7.58
Room 412	10	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.14	754	0.0	\$85.06	\$629.00	\$85.00	6.40
Room 414	5	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.10	543	0.0	\$61.31	\$490.00	\$25.00	7.58
Room 414	15	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	15	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.21	1,131	0.0	\$127.59	\$808.50	\$110.00	5.47
Room 415	6	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.12	652	0.0	\$73.57	\$588.00	\$30.00	7.58
Room 415	12	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	Yes	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.17	905	0.0	\$102.07	\$700.80	\$95.00	5.94
Stairwell 3	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.04	228	0.0	\$25.69	\$117.00	\$20.00	3.78
Stairwell 3	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Stairwell 3	1	Compact Fluorescent: 23W Screen-in CFL	Wall Switch	23	3,000	Relamp	No	1	LED Screw-In Lamps: Downlight Solid State Retrofit	Wall Switch	9	3,000	0.01	48	0.0	\$5.45	\$53.75	\$0.00	9.86
2nd Floor Hallway	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	2,100	0.44	2,302	0.0	\$259.73	\$1,052.00	\$160.00	3.43
2nd Floor Hallway	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
East Gymnasium	24	Linear Fluorescent - T8: 4' T8 (32W) - 6L	Wall Switch	176	3,000	Relamp	No	24	LED - Linear Tubes: (6) 4' Lamps	Wall Switch	87	3,000	1.40	7,369	0.0	\$831.49	\$3,221.36	\$720.00	3.01
East Gymnasium	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Boys Locker Room	11	Compact Fluorescent: 2X13W 2-pin	Wall Switch	26	3,000	Relamp	Yes	11	LED - Fixtures: Downlight Solid State Retrofit	Occupancy Sensor	9	2,100	0.14	748	0.0	\$84.36	\$970.15	\$35.00	11.09
Boys Locker Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.06	342	0.0	\$38.54	\$175.50	\$30.00	3.78
Gym Office (Boys)	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Gym Office (Boys)	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.02	114	0.0	\$12.85	\$58.50	\$10.00	3.78
Girls Locker Room	11	Compact Fluorescent: 2X13W 2-pin	Wall Switch	26	3,000	Relamp	Yes	11	LED - Fixtures: Downlight Solid State Retrofit	Occupancy Sensor	9	2,100	0.14	748	0.0	\$84.36	\$970.15	\$35.00	11.09
Girls Locker Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,000	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,000	0.06	342	0.0	\$38.54	\$175.50	\$30.00	3.78
Gym Office (Girls)	2	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.02	121	0.0	\$13.62	\$71.80	\$10.00	4.54
Gym Office (Girls)	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46

Location	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
	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
Auditorium	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Auditorium	2	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	3,000	Relamp	No	2	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	26	3,000	0.04	190	0.0	\$21.41	\$123.40	\$30.00	4.36
Auditorium	40	LED - Fixtures: Downlight Recessed	Wall Switch	9	3,000	None	No	40	LED - Fixtures: Downlight Recessed	Wall Switch	9	3,000	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Auditorium	25	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	25	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.29	1,509	0.0	\$170.31	\$897.50	\$125.00	4.54
Stage	53	Incandescent: 65W A Lamp	Wall Switch	65	3,000	Relamp	No	53	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	1.95	10,240	0.0	\$1,155.37	\$2,848.91	\$265.00	2.24
Storage	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Storage	1	LED - Fixtures: Downlight Recessed	Wall Switch	9	3,000	None	No	1	LED - Fixtures: Downlight Recessed	Wall Switch	9	3,000	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Exterior doors Entrance	1	Metal Halide: (1) 150W Lamp	Daylight Dimming	190	1,612	Fixture Replacement	No	1	LED - Fixtures: Downlight Recessed	Daylight Dimming	75	1,612	0.08	213	0.0	\$24.05	\$271.12	\$5.00	11.06
Exterior doors Entrance	5	Incandescent: 60W A Lamp	Daylight Dimming	60	1,612	Relamp	No	5	LED Screw-In Lamps: LED Screw-in	Daylight Dimming	9	1,612	0.17	473	0.0	\$53.34	\$268.77	\$25.00	4.57
Perimeter Light (Wall Pack)	33	Metal Halide: (1) 250W Lamp	Daylight Dimming	295	1,612	Fixture Replacement	No	33	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	75	1,612	4.76	13,459	0.0	\$1,518.58	\$12,892.34	\$3,300.00	6.32
Perimeter Light (Wall Pack)	2	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	45	1,612	None	No	2	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	45	1,612	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Perimeter Light (Wall Pack)	2	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	30	1,612	None	No	2	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	30	1,612	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Side Walk Pole Lighting	9	Metal Halide: (1) 400W Lamp	Daylight Dimming	458	1,612	Fixture Replacement	No	9	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Daylight Dimming	126	1,612	1.96	5,539	0.0	\$625.00	\$17,576.94	\$900.00	26.68
Room 126 (Cooking Class)	36	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	36	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.85	4,453	0.0	\$502.40	\$3,798.00	\$215.00	7.13
Room 122	10	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.23	1,237	0.0	\$139.56	\$1,250.00	\$85.00	8.35
Room 122	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Room 122	1	Incandescent: 60W A Lamp	Wall Switch	60	3,000	Relamp	No	1	LED Screw-In Lamps: LED Screw-in	Wall Switch	9	3,000	0.03	176	0.0	\$19.85	\$53.75	\$5.00	2.46
Roof Top	1	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	45	1,612	None	No	1	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	45	1,612	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Romm 221	7	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,100	0.16	866	0.0	\$97.69	\$956.00	\$70.00	9.07
Romm 221	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	7	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.08	423	0.0	\$47.69	\$251.30	\$35.00	4.54
Romm 310	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,000	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.05	242	0.0	\$27.25	\$143.60	\$20.00	4.54
Romm 310	8	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Wall Switch	46	3,000	Relamp & Reballast	No	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,000	0.17	869	0.0	\$98.10	\$784.00	\$40.00	7.58

Motor Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
		Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
West Wing Boiler Room	West Wing	2	Heating Hot Water Pump	20.0	91.0%	Yes	3,391	No	91.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
West Wing Boiler Room	West Wing Boiler Room	1	Exhaust Fan	0.8	69.5%	No	2,745	No	69.5%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
East Wing Boiler Room	East Wing	2	Heating Hot Water Pump	15.0	93.0%	Yes	3,391	No	93.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
East Wing Boiler Room	East Wing Boiler Room	1	Other	0.1	68.5%	No	2,745	No	68.5%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
East Wing Boiler Room	East Wing Boiler Room	1	Exhaust Fan	0.5	71.5%	No	2,745	No	71.5%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Restrooms/Hallways	4	Exhaust Fan	0.3	69.8%	No	2,745	No	69.8%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Hallway	3	Exhaust Fan	0.3	70.1%	No	2,745	No	70.1%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Restrooms	2	Exhaust Fan	0.3	69.0%	No	2,745	No	69.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Kitchen	1	Kitchen Hood Exhaust Fan	3.0	68.0%	No	5,250	Yes	89.5%	Yes	1	0.47	11,843	74.6	\$2,112.28	\$3,812.49	\$900.00	1.38
Roof Top	Restroom	1	Exhaust Fan	0.3	68.0%	No	2,745	No	68.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Restroom	2	Exhaust Fan	0.3	68.0%	No	2,745	No	68.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Classrooms	4	Exhaust Fan	0.3	69.8%	No	2,745	No	69.8%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Guidance Room	Guidance Room	1	Supply Fan	2.0	86.7%	No	2,745	No	86.7%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Mechanical Room	Mechanical Room	1	Supply Fan	5.0	92.3%	No	2,745	No	92.3%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Boys Gym	Boys Gym	2	Supply Fan	5.0	92.5%	No	2,745	No	92.5%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Auxiliary Gym	Auxiliary Gym	2	Supply Fan	5.0	92.7%	No	2,745	No	92.7%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Auditorium	Auditorium	2	Supply Fan	5.0	92.5%	No	2,745	No	92.5%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
School Classrooms	School Classrooms	83	Other	0.3	69.7%	No	2,745	No	69.7%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Carrier RTU 50DY-030	1	Supply Fan	10.0	84.0%	Yes	3,391	No	84.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Carrier RTU 50DY-031	2	Other	1.0	80.0%	No	2,745	No	80.0%	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
Roof Top	Tempstar RTU PAF037	2	Supply Fan	0.3	77.7%	No	2,745	No	77.7%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Trane RTU SFHLF25	3	Other	1.0	82.0%	No	2,745	No	82.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Trane RTU SFHLF25	1	Supply Fan	10.0	91.7%	Yes	3,391	No	91.7%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Trane RTU SFHLF26	3	Exhaust Fan	3.0	84.0%	No	2,745	No	84.0%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	York RTU BBUZT	1	Supply Fan	1.0	82.7%	No	2,745	No	82.7%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	York RTU YCJD	76	Supply 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
Roof Top	SnyderGeneral RTU	1	Supply Fan	0.3	71.5%	No	2,745	No	71.5%	No		0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00

Electric HVAC Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions		Proposed Conditions									Energy Impact & Financial Analysis							
		System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof Top	School Classrooms	6	Split-System AC	3.50		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	23	Split-System AC	4.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	47	Split-System AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	1	Ductless Mini-Split HP	2.13	25.40	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	5	Split-System AC	1.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Auditorium	1	Packaged Air-Source HP	27.00	89.00	Yes	1	Packaged Air-Source HP	27.00	89.00	10.50	3.40	Yes	14.65	17,976	0.0	\$2,028.34	\$44,144.86	\$2,383.00	20.59
Roof Top	School Classrooms	6	Split-System AC	2.00		Yes	1	Split-System AC	2.00		14.00		No	11.72	19,776	0.0	\$2,231.44	\$2,992.44	\$184.00	1.26
Roof Top	Main Office/Guidance Office	2	Split-System AC	5.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	2	Split-System AC	2.50		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top (TU1)	Cafeteria 3	1	Packaged AC	25.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Classroom 117	1	Packaged Air-Source HP	3.00	33.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	1	Split-System AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Faculty Room	1	Ductless Mini-Split HP	1.50	17.00	Yes	1	Ductless Mini-Split HP	1.50	17.00	18.00	3.80	No	1.52	1,177	0.0	\$132.85	\$3,598.77	\$138.00	26.05
Roof Top	School Classrooms	3	Packaged Air-Source HP	5.00	60.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	2	Ductless Mini-Split HP	2.75	34.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	7	Packaged Air-Source HP	4.00	48.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	1	Ductless Mini-Split HP	1.75	21.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	3	Packaged Air-Source HP	6.50	78.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	East Gym Office	1	Split-System AC	1.50		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	School Classrooms	1	Split-System AC	1.00		Yes	1	Split-System AC	1.00		14.00		No	0.66	1,119	0.0	\$126.21	\$1,496.22	\$92.00	11.13

		Existing Conditions				Proposed Conditions							Energy Impact & Financial Analysis							
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof Top	Classroom 402	1	Split-System AC	3.00		Yes	1	Split-System AC	3.00		14.00		No	1.99	3,356	0.0	\$378.64	\$4,488.66	\$276.00	11.13
Roof Top	Weight Room	1	Packaged AC	20.00		Yes	1	Packaged AC	20.00		10.50		Yes	7.55	16,661	0.0	\$1,879.88	\$34,647.98	\$1,830.00	17.46
Roof Top	Main Office	1	Split-System AC	10.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Head Custodin Office	Head Custodin Office	1	Window AC	0.42		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Room 127	Room 127	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Room 125	Room 125	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Room 123	Room 123	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Main Office	Main Office	1	Window AC	0.67		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Child Study Room	Child Study Room	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Room 211	Room 211	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Room 203	Room 203	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Faculty Room	Faculty Room	1	Window AC	3.00		No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Ground Floor	School Classrooms	1	Split-System AC	1.00		Yes	1	Split-System AC	1.00		14.00		No	0.66	1,119	0.0	\$126.21	\$1,496.22	\$92.00	11.13
Ground Floor	School Classrooms	1	Ductless Mini-Split HP	1.50	19.00	No							No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	West faculty Dining Room	1	Packaged AC	4.00		Yes	1	Packaged AC	4.00		14.00		No	1.99	3,361	0.0	\$379.20	\$9,075.84	\$368.00	22.96
Roof Top	Classroom 121	1	Packaged AC	3.00		Yes	1	Packaged AC	3.00		14.00		No	2.30	3,878	0.0	\$437.54	\$6,806.88	\$276.00	14.93

Fuel Heating Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions			Proposed Conditions						Energy Impact & Financial Analysis						
		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
West Wing Boiler Room	West Wing	3	Condensing Hot Water Boiler	2,850.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
East Wing Boiler Room	East Wing	2	Condensing Hot Water Boiler	2,850.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
West Wing Boiler Room	West Wing Boiler Room	1	Warm Air Unit Heater	96.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
East Wing Boiler Room	East Wing Boiler Room	1	Warm Air Unit Heater	96.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Classrooms 224/227	Classrooms 224/227	2	Warm Air Unit Heater	96.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Boys & Girls Locker Room	Boys Locker Room	6	Warm Air Unit Heater	96.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top (TU1)	Cafeteria 3	1	Furnace	400.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Roof Top	Weight Room	1	Furnace	218.00	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00

DHW Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions		Proposed Conditions						Energy Impact & Financial Analysis						
		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
West Wing Boiler Room	School	2	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Kitchen storage Room	Kitchen	1	Storage Tank Water Heater (≤ 50 Gal)	No						0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Main Gym Storage Room	East Wing Locker rooms and Restrooms	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

Location	Recommendation Inputs				Energy Impact & Financial Analysis						
	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	29	Faucet Aerator (Lavatory)	2.20	1.00	0.00	0	47.0	\$488.43	\$207.93	\$0.00	0.43
Kitchen	6	Faucet Aerator (Kitchen)	3.00	2.20	0.00	0	6.5	\$67.37	\$43.02	\$0.00	0.64

Walk-In Cooler/Freezer Inventory & Recommendations

Location	Existing Conditions		Proposed Conditions			Energy Impact & Financial Analysis						
	Cooler/Freezer Quantity	Case Type/Temperature	Install EC Evaporator Fan Motors?	Install Electric Defrost Control?	Install Evaporator Fan Control?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	2	Cooler (35F to 55F)	No	No	No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Kitchen	2	Cooler (35F to 55F)	No	No	No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Kitchen	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

Location	Existing Conditions			Proposed Condi	Energy Impact & Financial Analysis						
	Quantity	Refrigerator/Freezer Type	ENERGY STAR Qualified?	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	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

Cooking Equipment Inventory & Recommendations

Location	Existing Conditions			Proposed Conditions	Energy Impact & Financial Analysis						
	Quantity	Equipment Type	High Efficiency Equipment?	Install High Efficiency Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Gas Combination Oven/Steam Cooker (<15 Pans)	Yes	No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Kitchen	1	Gas Convection Oven (Full Size)	Yes	No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00
Kitchen	1	Insulated Food Holding Cabinet (Full Size)	Yes	No	0.00	0	0.0	\$0.00	\$0.00	\$0.00	0.00

Plug Load Inventory

Location	Existing Conditions			
	Quantity	Equipment Description	Energy Rate (W)	ENERGY STAR Qualified?
School	13	Copy Machine	1,400.0	Yes
School	24	Small Printer	46.0	Yes
School	185	Desktop LCD Monitor	191.0	Yes
School	31	Microwave	850.0	No
School	16	Refrigerator	250.0	Yes
School	14	Water Fountain	175.0	Yes
Cooking Class	1	Washing Machine	1,500.0	Yes
Cooking Class	1	Dryer Machine	1,800.0	Yes
Cooking Class	7	Electric Range	1,800.0	Yes
School	2	Ice Machine	1,600.0	Yes
School	9	Coffee Machine	950.0	No

Vending Machine Inventory & Recommendations

Location	Existing Conditions		Proposed Conditions	Energy Impact & Financial Analysis						
	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
School	5	Refrigerated	Yes	0.00	8,059	0.0	\$909.35	\$1,150.00	\$0.00	1.26
School	2	Non-Refrigerated	Yes	0.00	685	0.0	\$77.29	\$460.00	\$0.00	5.95

Appendix B: ENERGY STAR® Statement of Energy Performance

ENERGY STAR® Statement of Energy Performance

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ENERGY STAR®
Score¹

Brick Township High School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 207,400
Built: 1958

For Year Ending: February 29, 2016
Date Generated: August 02, 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 Brick Township High School 300 Chambersbridge Road Brick, New Jersey 08723	Property Owner Brick Township Board of Education 101 Hendrickson Avenue Brick, NJ 08724 (732) 785-3000	Primary Contact James Edwards 101 Hendrickson Avenue Brick, NJ 08724 (732) 785-3000 jedwards@brickschools.org
Property ID: 5991744		

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI	Annual Energy by Fuel		National Median Comparison
77.2 kBtu/ft ²	Natural Gas (kBtu)	10,862,779 (68%)	National Median Site EUI (kBtu/ft ²)
	Electric - Grid (kBtu)	5,154,869 (32%)	National Median Source EUI (kBtu/ft ²)
			% Diff from National Median Source EUI
			-9%
Source EUI			Annual Emissions
133 kBtu/ft ²			Greenhouse Gas Emissions (Metric Tons CO ₂ e/year)
			1,168

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)