Local Government Energy Audit Report

High School North

February 14, 2024

Prepared for:

Middletown Township Public Schools
63 Tindall Road
Middletown, New Jersey 07748

Prepared by:

TRC
317 George Street
New Brunswick, New Jersey 08901

Disclaimer

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

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

TRC bases estimated material and labor costs primarily on RS Means cost manuals as well as on our experience at similar facilities. This approach is based on standard cost estimating manuals and is vendor neutral. Cost estimates include material and labor pricing associated with one for one equipment replacements. Cost estimates do not include demolition or removal of hazardous waste. The actual implementation costs for energy savings projects are anticipated to be significantly higher based on the specific conditions at your site(s). We strongly recommend that you work with your design engineer or contractor to develop actual project costs for your specific scope of work for the installation of high efficiency equipment. We encourage you to obtain multiple estimates when considering measure installations. Actual installation costs can vary widely based on selected products and installers. TRC and NJBPU do not guarantee cost estimates and shall in no event be held liable should actual installed costs vary from these material and labor estimates.

Incentive values provided in this report are estimated based on previously run state efficiency programs. Incentive levels are not guaranteed. The NJBPU reserves the right to extend, modify, or terminate programs without prior notice. Please review all available utility program incentives and eligibility requirements prior to selecting and installing any energy conservation measures.

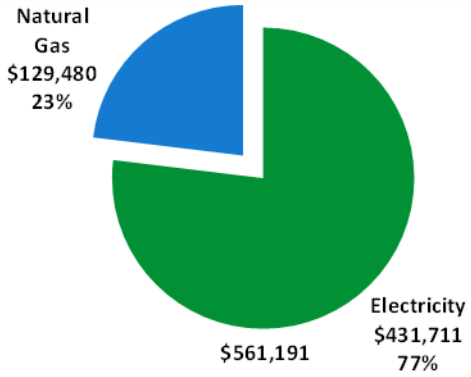
The customer and their respective contractor(s) are responsible to implement energy conservation measures in complete conformance with all applicable local, state, and federal requirements.

Table of Contents

1 EXECUTIVE SUMMARY

The New Jersey Board of Public Utilities (NJBPU) has sponsored this Local Government Energy Audit (LGEA) report for High School North. This report provides you with information about your facility's energy use, identifies energy conservation measures (ECMs) that can reduce your energy use, and provides information and assistance to help make changes in your facility. TRC conducted this study as part of a comprehensive effort to assist New Jersey school districts and local governments in controlling their energy costs and to help protect our environment by reducing statewide energy consumption.

BUILDING PERFORMANCE REPORT

Annual Utilities	Costs: $561,191 Electricity: 4,335,257 kWh Natural Gas: 78,520 Therms	
ENERGY STAR® Benchmarking Score	34 *(1-100 scale)*	This building performs at below the national average. This report contains suggestions about how to improve building performance and reduce energy costs.

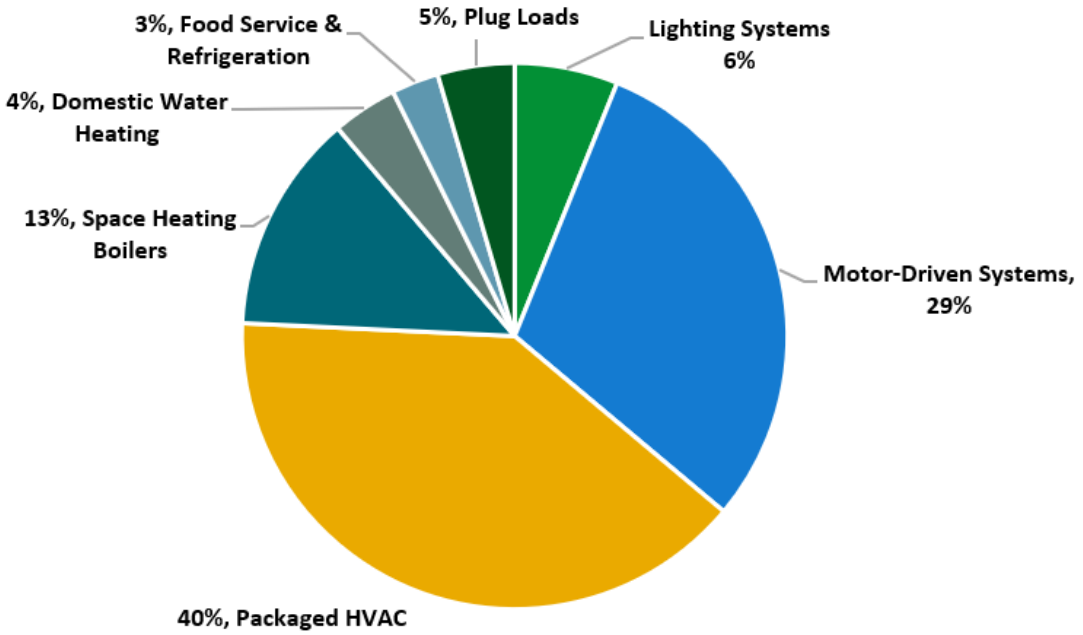


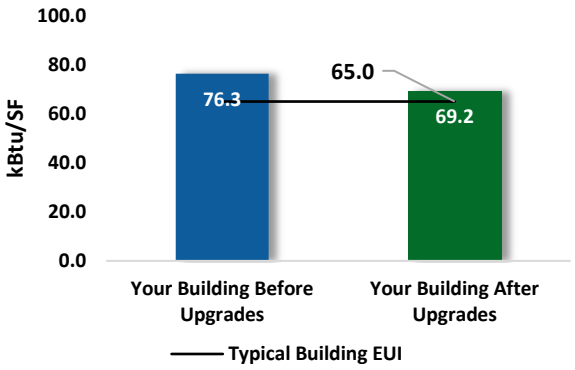
Figure 1 - Energy Use by System

POTENTIAL IMPROVEMENTS

This energy audit considered a range of potential energy improvements in your building. Costs and savings will vary between improvements. Presented below are two potential scopes of work for your consideration.

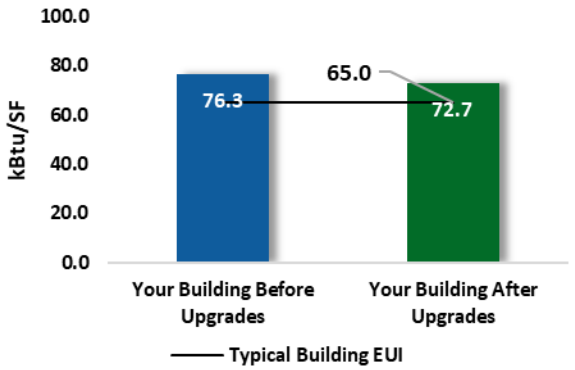
Scenario 1: Full Package (All Evaluated Measures)

Installation Cost	$1,703,777
Potential Rebates & Incentives[1]	$40,067
Annual Cost Savings	$54,530
Annual Energy Savings	Electricity: 456,003 kWh Natural Gas: 5,591 Therms
Greenhouse Gas Emission Savings	262 Tons
Simple Payback	30.5 Years
Site Energy Savings (All Utilities)	9%



Scenario 2: Cost Effective Package[2]

Installation Cost	$152,313
Potential Rebates & Incentives	$5,545
Annual Cost Savings	$27,165
Annual Energy Savings	Electricity: 217,670 kWh Natural Gas: 3,329 Therms
Greenhouse Gas Emission Savings	129 Tons
Simple Payback	5.4 Years
Site Energy Savings (all utilities)	5%



On-site Generation Potential

Photovoltaic	None
Combined Heat and Power	None

[1] Incentives are based on previously run state rebate programs. Contact your utility provider for current program incentives that may apply.

[2] A cost-effective measure is defined as one where the simple payback does not exceed two-thirds of the expected proposed equipment useful life. Simple payback is based on the net measure cost after potential incentives.

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**26,324**	**1.7**	**-2**	**$2,584**	**$11,468**	**$2,890**	**$8,578**	**3.3**	**26,245**
ECM 1	Install LED Fixtures	Yes	15,563	0.0	0	$1,550	$10,111	$2,700	$7,411	4.8	15,672
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,026	0.1	0	$99	$152	$15	$137	1.4	1,008
ECM 3	Retrofit Fixtures with LED Lamps	Yes	9,735	1.6	-2	$936	$1,206	$175	$1,031	1.1	9,565
Lighting Control Measures			**14,841**	**2.6**	**-3**	**$1,427**	**$22,074**	**$2,630**	**$19,444**	**13.6**	**14,581**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	14,841	2.6	-3	$1,427	$22,074	$2,630	$19,444	13.6	14,581
Unitary HVAC Measures			**219,276**	**124.4**	**0**	**$21,836**	**$1,315,583**	**$33,997**	**$1,281,586**	**58.7**	**220,810**
ECM 5	Install High Efficiency Air Conditioning Units	No	1,679	1.0	0	$167	$15,900	$546	$15,353	91.8	1,691
ECM 6	Install High Efficiency Heat Pumps	No	217,597	123.5	0	$21,669	$1,299,683	$33,450	$1,266,233	58.4	219,119
HVAC System Improvements			**14,552**	**0.0**	**121**	**$3,437**	**$57,096**	**$0**	**$57,096**	**16.6**	**28,766**
ECM 7	Implement Demand Control Ventilation (DCV)	No	14,552	0.0	121	$3,437	$57,096	$0	$57,096	16.6	28,766
Domestic Water Heating Upgrade			**0**	**0.0**	**112**	**$1,841**	**$171,260**	**$25**	**$171,235**	**93.0**	**13,070**
ECM 8	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	106	$1,744	$171,210	$0	$171,210	98.2	12,384
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	6	$97	$50	$25	$25	0.3	686
Food Service & Refrigeration Measures			**4,505**	**0.2**	**0**	**$449**	**$7,576**	**$525**	**$7,051**	**15.7**	**4,536**
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	No	983	0.1	0	$98	$1,517	$200	$1,317	13.4	990
ECM 11	Refrigeration Controls	No	3,522	0.0	0	$351	$6,059	$325	$5,734	16.4	3,546
Custom Measures			**176,505**	**0.0**	**332**	**$23,057**	**$118,720**	**$0**	**$118,720**	**5.1**	**216,652**
ECM 12	Retro-Commissioning Study	Yes	176,505	0.0	332	$23,057	$118,720	$0	$118,720	5.1	216,652
TOTALS (COST EFFECTIVE MEASURES)			**217,670**	**4.3**	**333**	**$27,165**	**$152,313**	**$5,545**	**$146,767**	**5.4**	**258,165**
TOTALS (ALL MEASURES)			**456,003**	**128.9**	**559**	**$54,630**	**$1,703,777**	**$40,067**	**$1,663,710**	**30.5**	**524,661**

Figure 2 – Evaluated Energy Improvements

For more detail on each evaluated energy improvement and a break out of cost-effective improvements, see **Section 4: Energy Conservation Measures.**

1.1 Planning Your Project

Careful planning makes for a successful energy project. When considering this scope of work, you will have some decisions to make, such as:

- How will the project be funded and/or financed?
- Is it best to pursue individual ECMs, groups of ECMs, or use a comprehensive approach where all ECMs are installed together?
- Are there other facility improvements that should happen at the same time?

Pick Your Installation Approach

Utility-run energy efficiency programs and New Jersey's Clean Energy Programs, give you the flexibility to do a little or a lot. Rebates, incentives, and financing are available to help reduce both your installation costs and your energy bills. If you are planning to take advantage of these programs, make sure to review incentive program guidelines before proceeding. This is important because in most cases you will need to submit applications for the incentives *before* purchasing materials or starting installation.

Options from Your Utility Company

Prescriptive and Custom Rebates

For facilities wishing to pursue only selected individual measures (or planning to phase implementation of selected measures over multiple years), incentives are available through the Prescriptive and Custom Rebates program. To participate, you can use internal resources or an outside firm or contractor to perform the final design of the ECM(s) and install the equipment. Program pre-approval may be required for some incentives. Contact your utility company for more details prior to project installation.

Direct Install

The Direct Install program provides turnkey installation of multiple measures through an authorized contractor. This program can provide incentives up to 70% or 80% of the cost of selected measures. A Direct Install contractor will assess and verify individual measure eligibility and perform the installation work. The Direct Install program is available to sites with an average peak demand of less than 200 kW.

Engineered Solutions

The Engineered Solutions program provides tailored energy-efficiency assistance and turnkey engineering services to municipalities, universities, schools, hospitals, and healthcare facilities (MUSH), non-profit entities, and multifamily buildings. The program provides all professional services from audit, design, construction administration, to commissioning and measurement and verification for custom whole-building energy-efficiency projects. Engineered Solutions allows you to install as many measures as possible under a single project as well as address measures that may not qualify for other programs.

For more details on these programs please contact your utility provider.

Options from New Jersey's Clean Energy Program

Financing and Planning Support with the Energy Savings Improvement Program (ESIP)

For larger facilities with limited capital availability to implement ECMs, project financing may be available through the 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. You have already taken the first step as an LGEA customer, because this report is required to participate in ESIP.

Resiliency with Return on Investment through Combined Heat and Power (CHP)

The CHP program provides incentives for combined heat and power (i.e., cogeneration) and waste heat to power projects. Combined heat and power systems generate power on-site and recover heat from the generation system to meet on-site thermal loads. Waste heat to power systems use waste heat to generate power. You will work with a qualified developer who will design a system that meets your building's heating and cooling needs.

Successor Solar Incentive Program (SuSI)

New Jersey is committed to supporting solar energy. Solar projects help the state reach the renewable goals outlined in the state's Energy Master Plan. The SuSI program is used to register and certify solar projects in New Jersey. Rebates are not available, but certified solar projects are able to earn one SREC II (Solar Renewable Energy Certificates II) for each megawatt-hour of solar electricity produced from a qualifying solar facility.

Ongoing Electric Savings with Demand Response

The Demand Response Energy Aggregator program reduces electric loads at commercial facilities when wholesale electricity prices are high or when the reliability of the electric grid is threatened due to peak power demand. By enabling commercial facilities to reduce electric demand 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 demand response (DR) programs. Program participation is voluntary, and facilities receive payments regardless of whether they are called upon to curtail their load during times of peak demand.

Large Energy User Program (LEUP)

LEUP is designed to promote self-investment in energy efficiency. It incentivizes owners/users of buildings to upgrade or install energy conserving measures in existing buildings to help offset the capital costs associated with the project. The efficiency upgrades are customized to meet the requirements of the customers' existing facilities, while advancing the State's energy efficiency, conservation, and greenhouse gas reduction goals.

For more details on these programs please visit New Jersey's Clean Energy Program website .

2 EXISTING CONDITIONS

The New Jersey Board of Public Utilities (NJBPU) has sponsored this Local Government Energy Audit (LGEA) report for High School North. This report provides information on how your facility uses energy, identifies energy conservation measures (ECMs) that can reduce your energy use, and provides information and assistance to help you implement the ECMs.

TRC conducted this study as part of a comprehensive effort to assist New Jersey educational and local government facilities in controlling energy costs and protecting our environment by offering a wide range of energy management options and advice.

2.1 Site Overview

On May 23, 2023, TRC performed an energy audit at High School North located in Middletown, New Jersey. TRC met with facility staff to review the facility operations and help focus our investigation on specific energy-using systems.

High School North located at 63 Tindall Road and is a four-year comprehensive public high school serving students in ninth through twelfth grades. The facility is comprised of a school building that includes typical educational, administrative, assembly and recreation spaces. The school building is a three-story, 276,800 square foot building built in 1952. Additionally, a 20,000 square foot gymnasium bubble has been built to accommodate extra sports activities. Spaces include classrooms, gymnasium, locker rooms, auditorium, library, offices, kitchen, cafeteria, corridors, stairwells, conference rooms, offices, storage, and basement mechanical spaces.

Facility lighting systems consist mostly of linear LED tubes and LED lamps. The building is 100% heated and cooled, mainly by a mix of geothermal water source heat pumps (WSHPs) and roof mounted packaged units (RTUs) supplemented by three condensing hot water boilers. The building has a passenger elevator and two gas-fired backup generators. Through a power purchase agreement (PPA) in 2017, solar photovoltaic arrays with a 477-kW capacity were installed on the flat roof section of the building.

Recent Improvements and Facility Concerns

Facility concerns include the underground geothermal system and their aging water source heat pumps which are approaching the end of their useful life and require high maintenance.

In 2017, the facility implemented interior and exterior lighting retrofits through ESIP, and a substantial mechanical HVAC systems upgrade. As part of the HVAC mechanical upgrade, three condensing boilers, a cooling tower, and 27 RTUs were installed. Additionally, all the building electric transformers have been replaced with energy efficient transformers.

It should be noted that since the time of the site visits many improvements have been made, which has resulted in better facility performance and higher ENERGY STAR scores.

Geothermal System

Auditorium

2.2 Building Occupancy

High School North operates on a 10-month schedule. During a typical weekday, the high school is occupied by 1,392 students and 232 staff. There are some Saturday activities and after school programs in summer. High School North is shut down around 11:00 PM after the cleaning process.

It should be noted that the energy and economic analysis for the facilities is based on the use of the building during the utility billing period, and that results will vary based on changes to building.

Building Name	Weekday/Weekend	Operating Schedule
High School North - General Operating Hours	Weekday	6:00 AM - 11:00 PM
	Weekend (summer)	7:00 AM - 3:00 PM
High School North - Classes Hours	Weekday	7:30 AM - 2:00 PM
	Weekend (Summer)	7:00 AM - 3:00 PM

Figure 3 - Building Occupancy Schedule

2.3 Building Envelope

Building walls are constructed of concrete masonry unit (CMU) block over structural steel with a brick veneer façade, with gypsum drywall and painted CMU interior finish. The level of exterior wall insulation is unknown. The building has a flat roof finished with grey membrane. The roof was replaced in 2015 and is in good condition.

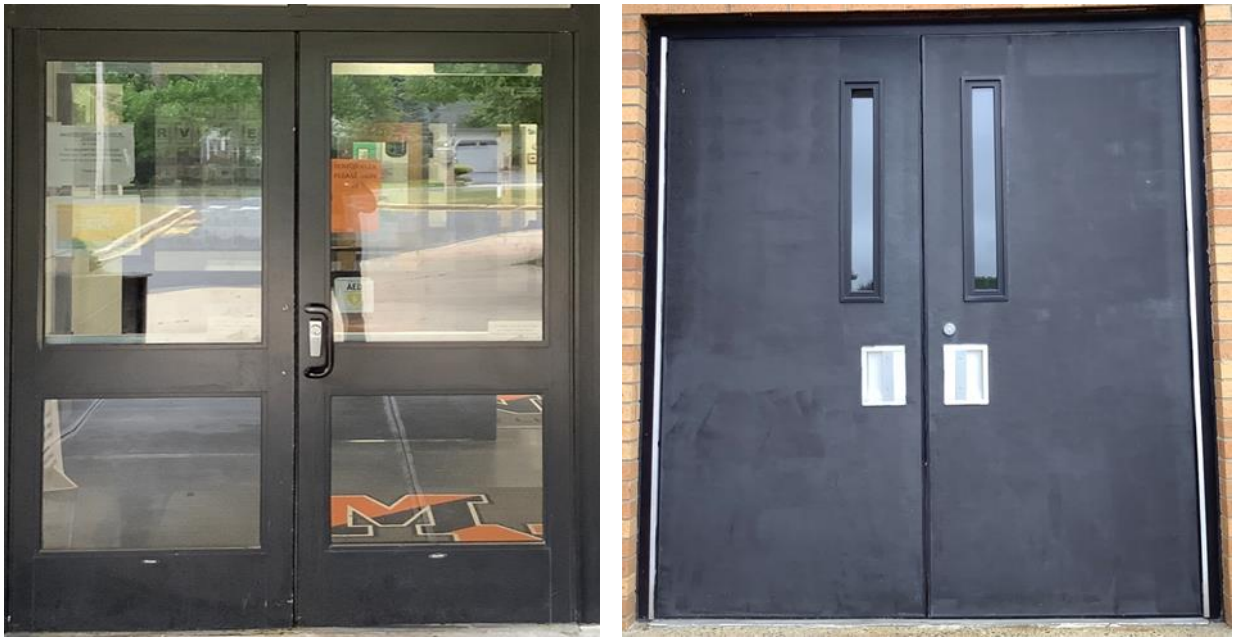
Windows are comprised of a mix of double and single paned units with aluminum frames. Operable and fixed window weather seals are in fair condition, showing signs of wear. The facility is planning to replace the windows. The main entrance doors are aluminum framed glass. Exit doors are mostly FRP (fiberglass-reinforced polymer) rated doors are new and in good condition. Degraded window and door seals increase drafts and outside air infiltration.

Building Walls

Building Wall

Roof

Windows



Exterior Doors

High School North Bubble

2.4 Lighting Systems

Lighting systems throughout the building have been retrofitted with LED sources, primarily with linear LED tubes. A small number of linear fluorescent T8 lamps are found in spaces including the ticket booth, storage rooms, and the library's corridor display boxes. There are three linear fluorescent T12 display lamps in the library corridor. Two offices in the basement have biaxial compact fluorescent lamps (CFLs).

Linear LED tubes fixture types include 1-lampp, 2-lamp, 3-lamp, or 4-lamp, 2-foot or 4-foot-long troffer, recessed, and surfaced mounted fixtures and 2-foot-long fixtures with U-bend tube lamps. The gymnasiums, auditorium and its stage, outside bubbles, and several corridors are lit with LED fixtures. A small number of LED lamps are used in conjunction with linear LED tubes in restrooms while a good number of them are used in conjunction with linear LED tubes in various corridors and in the auditorium.

Most fixtures are in good condition. Interior lighting levels were generally sufficient. All exit signs are LED. Light fixtures in spaces are primarily controlled by occupancy sensors that are either ceiling or wall mounted except for spaces including storage rooms, basement conference room, restrooms, stairwells, team locker room, and other small spaces that have light fixtures controlled by wall switches.

Exterior perimeter and entrance fixtures have been replaced with LED fixtures controlled by photocells.

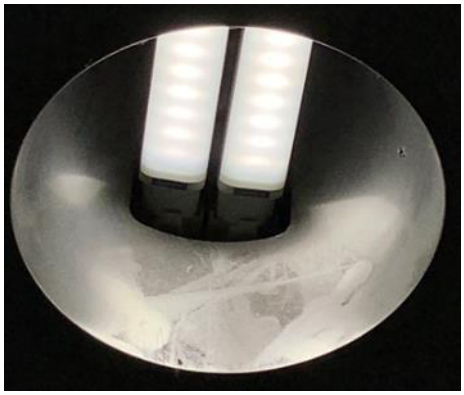
The parking lot is illuminated by high pressure sodium lamps that are controlled by photocells and belong to Jersey Central Power & Light (JCP&L). The lighting is provided by unmetered streetlights for which the school is paying a fixed monthly consumption fee.

The facility has football field that is illuminated when needed by 43 1500-Watt pole mounted fixtures that are controlled by a circuit breaker.

Linear LED Tubes Fixtures

2-Foot-Long LED Tubes

LED Fixtures



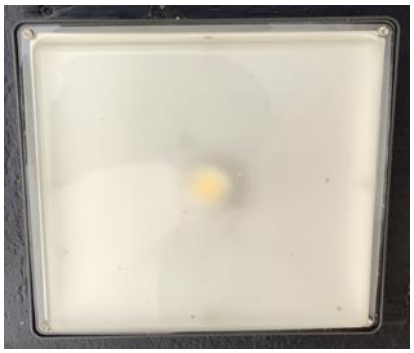
LED Lamps

LED Exit Sign

Wall Mounted Occupancy Sensor

Wall Mounted LED Fixtures

Pole Mounted Metal Halide Fixture



Recessed LED Fixtures

2.5 Air Handling Systems

Unitary Electric HVAC Equipment

The basement IT room is air conditioned by a 2-ton split system AC and a 6.92-ton Liebert condensing unit connected to an indoor air handling unit. The units appear in fair to poor condition and have been evaluated for replacement. The elevator room is heated and cooled by a heat pump unit with heating and cooling capacities of 22 MBh and 1.5 tons, respectively. This unit is in good condition. The unitary electric equipment is controlled by programmable thermostats. A few window-type AC units are used.

Window ACs

Split System ACs

Water Source Heat Pumps (WSHPs)

Various building spaces including classrooms, offices, and other small spaces are heated and cooled by 230 Trane water source heat pumps (WSHPs) of various sizes. The units are mainly above ceiling mounted except for some wall mounted units that are in the style of typical classroom vertical unit ventilators. The WSHPs vary in heating and cooling capacities between 9.40 MBh and 71.77 MBh and 0.5 tons and 5 tons, respectively. The WSHPs are near the extent of their useful lives. They have been evaluated for replacement.

The distribution system is a standard closed loop where the loop piping runs inside the building and includes a heat adder (condensing boilers), a cooling tower (heat rejecter), pumps, heat exchangers, and controls. The WSHPs are equipped with fractional hp supply fans to condition the respective spaces. The system is controlled by the building automation system (BAS).

Cooling Mode (Summer Operation):

Each refrigerant to water heat exchanger transfers the heat from the cooling tower load plus the heat of compression into the common water loop. This process raises the temperature of the loop. When the loop temperature approaches the upper temperature limit, the heat rejector (cooling tower) is staged to remove heat from the loop. It will maintain a maximum desired water temperature. Individual WSHP units will cycle on and off to satisfy their respective zone temperatures.

Heating Mode (Winter Operation):

Each refrigerant to water heat exchanger acts as an evaporator and absorbs heat from the water loop. This lowers the temperature of the loop. When loop temperature approaches the lower limit of about 60˚F, the heat adder is staged to add heat to the loop, maintaining a minimum loop water temperature of 60˚F. Individual WSHP units' cycle on and off to satisfy their respective zone temperatures'

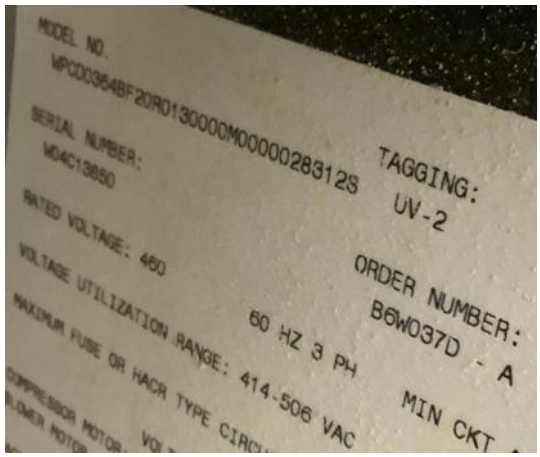
Intermediate Season:

Some units may be in the cooling mode (adding heat to the common water loop) while others are in the heating mode (absorbing heat from the loop). During this condition, the loop may be in equilibrium and not require heat to be added or rejected. The loop water temperature is allowed to vary within the approximate desired range.

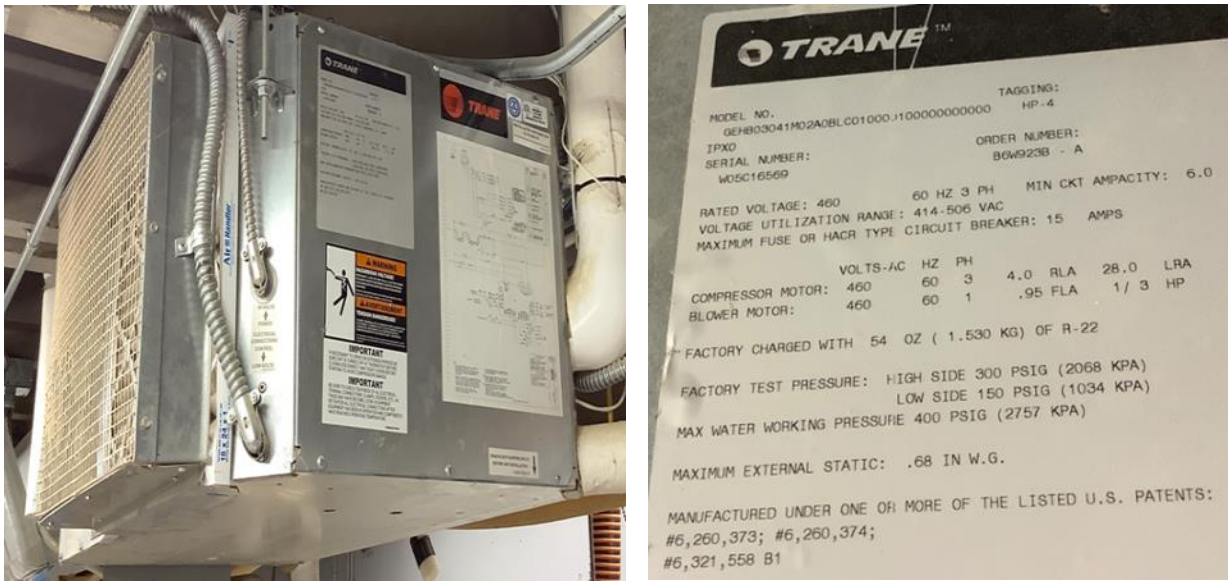
The following table provides summary information about the WSHPs:

Location	Unit ID	Areas Served	Cooling Capacity (Ton)	Heating Capacity (MBh)	Quantity	Condition
Various Spaces	CHP-1	Various Spaces	0.50	9.40	15	Fair/Poor
Various Spaces	CHP-2	Various Spaces	0.75	10.90	11	Fair/Poor
Various Spaces	CHP-3	Various Spaces	1.00	14.60	12	Fair/Poor
Various Spaces	CHP-4	Various Spaces	1.25	17.90	7	Fair/Poor
Various Spaces	CHP-5	Various Spaces	1.50	20.80	26	Fair/Poor
Various Spaces	HP-1	Various Spaces	1.00	14.60	21	Fair/Poor
Various Spaces	HP-2	Various Spaces	1.25	18.30	9	Fair/Poor
Various Spaces	HP-3	Various Spaces	1.50	21.90	10	Fair/Poor
Various Spaces	HP-4	Various Spaces	2.50	35.70	28	Fair/Poor

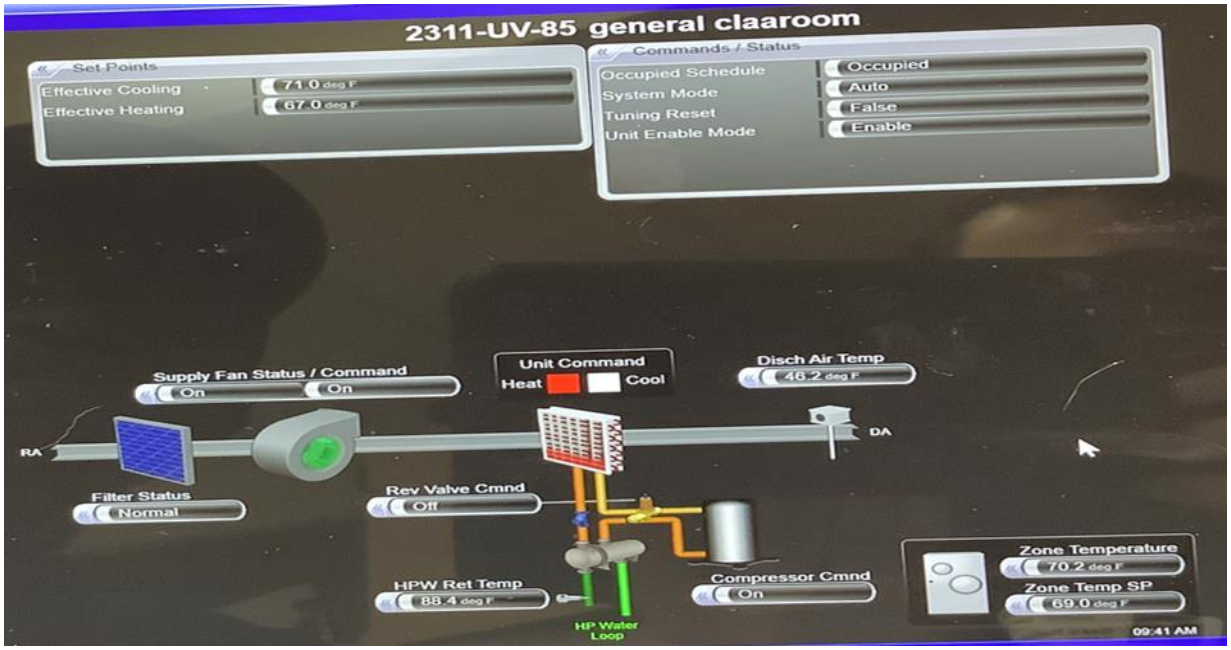
Location	Unit ID	Areas Served	Cooling Capacity (Ton)	Heating Capacity (MBh)	Quantity	Condition
Various Spaces	HP-5	Various Spaces	3.00	41.20	14	Fair/Poor
Various Spaces	HP-6	Various Spaces	4.00	58.20	7	Fair/Poor
Various Spaces	HP-7	Various Spaces	5.00	70.50	5	Fair/Poor
Various Spaces	HP-8	Various Spaces	5.00	75.40	2	Fair/Poor
Various Spaces	UV-2	Various Spaces	3.00	52.95	14	Fair/Poor
Various Spaces	UV-3	Various Spaces	3.33	61.18	20	Fair/Poor
Various Spaces	UV-4	Various Spaces	3.75	71.77	29	Fair/Poor



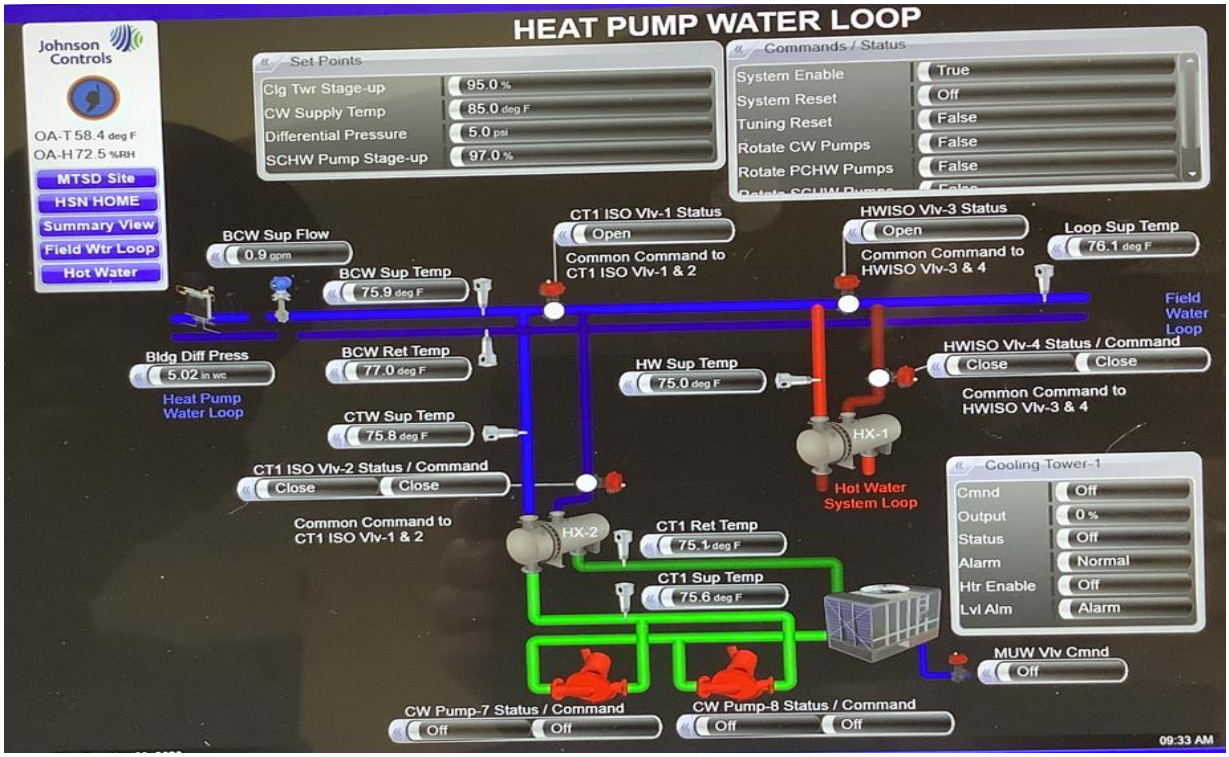
Trane Unit Ventilator WSHP



Trane Horizontal WSHP



BMS Screenshot - Unit Ventilator WSHP



BMS Screenshot - WSHP Loop

Packaged Units

Larger building spaces including gymnasiums, library, auditorium, locker rooms, cafeteria, outside bubbles, and first and second floor offices are conditioned by 27 AAON packaged roof top units (RTUs). They provide cooling through direct expansion coil and are equipped with gas-fired furnace sections. These units vary in cooling capacities between 6 tons and 50 tons with heating capacities between 72 MBh and 648 MBh. The units are equipped with economizers, heat wheels, and supply fan and return fan motors that are controlled by variable frequency drives (VFDs). The heat wheel transfers heat and humidity between the return and supply air. This brings the supply air closer in temperature and humidity to the return air, reducing the load on the heating and cooling systems.

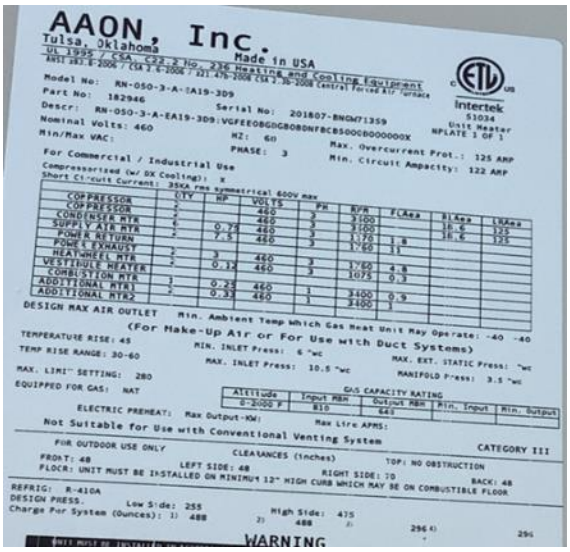
Air distribution is provided to supply air registers by ducts concealed above the ceilings. The RTUs are in good condition and controlled by the BMS. The building air distribution setpoints are 72°F for cooling and 68°F for heating when occupied, and 65°F for cooling and 78°F for heating when unoccupied.

The following table provides summary information about the package units:

Location	Unit (ID)	Area Served	Cooling Capacity (Ton)	Heating Capacity (MBh)	Condition
Roof	RTU-2	Aux Gymnasium	6.00	72.90	Good
Roof	RTU-4	Lower Gymnasium	50.00	648.00	Good
Roof	RTU-6	Boys Locker Room	7.00	72.90	Good
Roof	RTU-8	Classrooms	13.00	234.00	Good
Roof	RTU-10	Upper Gymnasium	20.00	218.70	Good
Roof	RTU-12	Upper Gymnasium	20.00	218.70	Good
Roof	RTU-14	Upper Gymnasium	20.00	218.70	Good
Roof	RTU-16	Girls Locker Room	8.00	120.00	Good
Roof	RTU-18	1st Floor Offices	16.00	218.70	Good
Roof	RTU-20	2nd Floor Offices	16.00	218.70	Good
Roof	RTU-24	Library	40.00	432.00	Good
Roof	RTU-26	Auditorium	40.00	432.00	Good
Roof	RTU-28	Stage	8.00	72.9	Good
Roof	RTU-30	Science Classrooms	18.00	218.70	Good
Roof	RTU-32	Science Classrooms	18.00	218.70	Good
Roof	RTU-34	Basement	7.00	72.9	Good
Roof	RTU-36	Science Classrooms	16.00	218.70	Good
Roof	RTU-38	TV Studio	18.00	218.70	Good
Roof	RTU-40	Cafeteria	50.00	648.00	Good
Roof	RTU-42	Faculty Room	7.00	120.00	Good

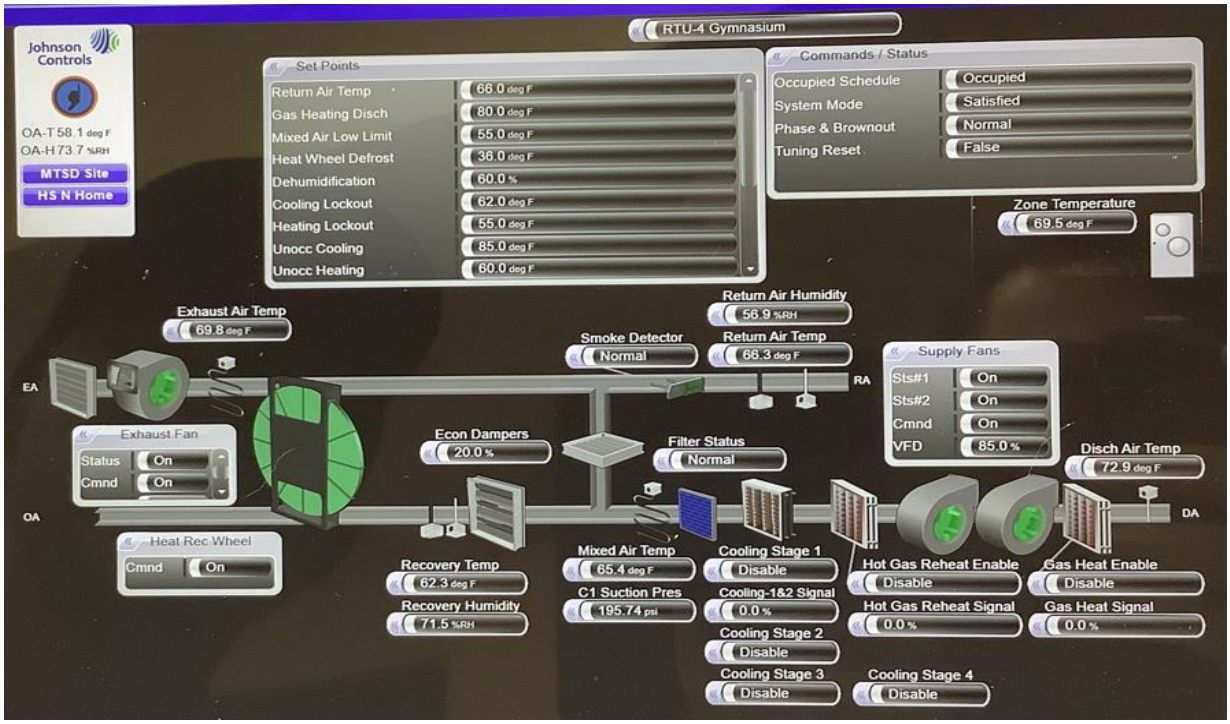
Location	Unit (ID)	Area Served	Cooling Capacity (Ton)	Heating Capacity (MBh)	Condition
Roof	RTU-44	Classrooms	8.00	72.9	Good
Roof	RTU-46	CPU Classrooms	8.00	72.9	Good
Roof	RTU-48	Classrooms	25.00	432.00	Good
Roof	RTU-50	Auditorium Rooms	16.00	218.7	Good
Roof	RTU-52	Music Room	18.00	218.7	Good
Ground Floor	RTU-N-1	Outside Bubble	30.00	432.00	Good
Ground Floor	RTU-N-2	Outside Bubble	30.00	432.00	Good

Refer to Appendix A for detailed information about each unit.



RTU-4 – Lower Gymnasium

RTU-4 - Return Fan and VFDs



BMS Screenshot RTU-4

2.6 Building General Exhaust Air Systems

Various building spaces are exhausted by motor driven exhaust fans. Science classrooms have specialty exhaust fans incorporated into fume hoods. The kitchen has a 3 hp exhaust fan which serves all kitchen hoods. Equipment is in good condition and controlled by manual switches.

Science Classroom Fume Hoods

3 hp Kitchen hood Exhaust Fans

2.7 Heating Hot Water Systems

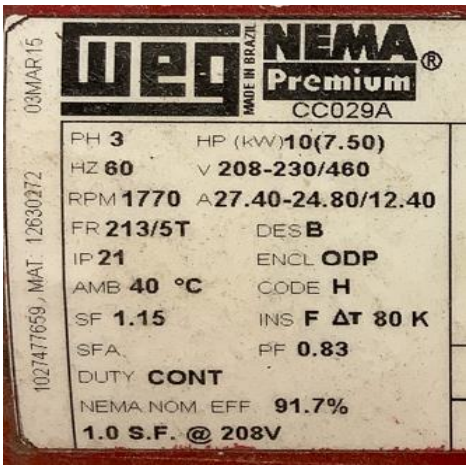
Three AERCO 2790 MBh output condensing hot water boilers are used as heat adders to supplement the WSHP heating loop when the loop temperature approaches the lower limit. The burners are fully modulating with a nominal efficiency of 93%. The boilers are configured in an automated lead-lag control scheme. Installed in 2017, the boilers are in good condition.

The hydronic distribution system is a two-pipe heating and cooling system with a hot water loop connected to a heat exchanger. Two, 10 hp based mounted variable speed pumps (P5 and P6) distribute heating hot water to WSHPs. The heating hot water loop is controlled by the BMS. The building occupied cooling and heating temperature setpoints are respectively 68°F and 72°F. Unoccupied cooling and heating setpoints are 78°F and 65°F, respectively.

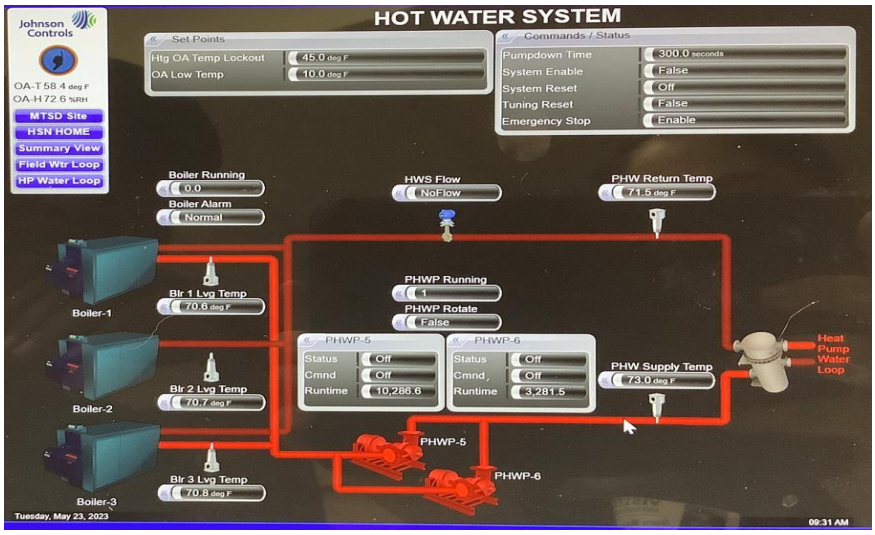
Overall water circulation and distribution details are provided in the following section.

AERCO Condensing Boilers

Control System



Hot Water Pumps - P5 and P6



BMS Screenshot - Heating Hot Water Loop

2.8 Condenser Water System

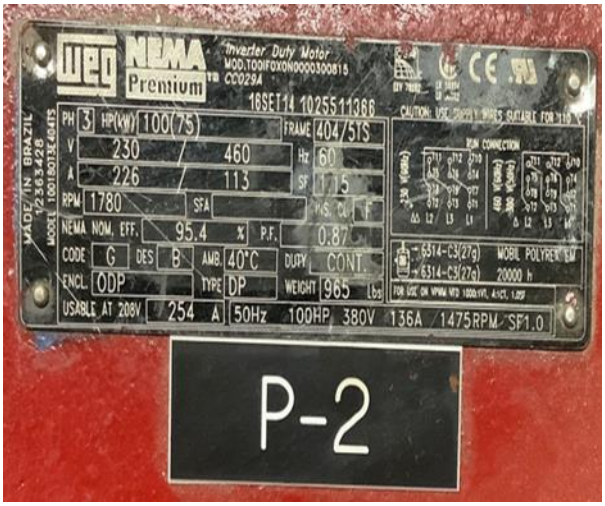
The condenser water system consists of a one-cell cooling tower equipped with a 50 hp variable speed drive fan. Installed in 2017, the cooling tower is in good condition. There are two. 40 hp variable flow condenser water pumps (P7 and P8) and a plate heat exchanger system, all located in the boiler room. The plate heat exchanger separates the hot medium from the cold. It transfers heat energy from one fluid to another and these fluids (hot water and condenser water) never encounter each other due to being separated by the heat exchanger.

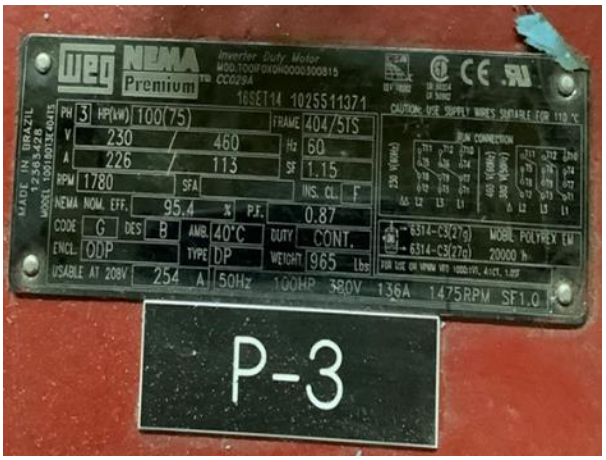
WSHP units are connected to a water distribution loop which circulates water throughout the building to transfer heat from one area to another. This common water loop provides what is essentially a heat-recovery system. Depending on zone temperature requirements, units that are providing heating extract heat from loop water while units providing cooling reject heat to the loop.

The geothermal water circulation system is comprised of two sets of based mounted pumps. There are two ,100 hp variable flow pumps (P1 and P2) that supply water from the field and two, 100 hp variable flow pumps (P3 and P4) that circulate water to WSHP units. The pumps are configured in an automated lead-lag control scheme. The condenser water loop and geothermal water loop are controlled by the BMS.

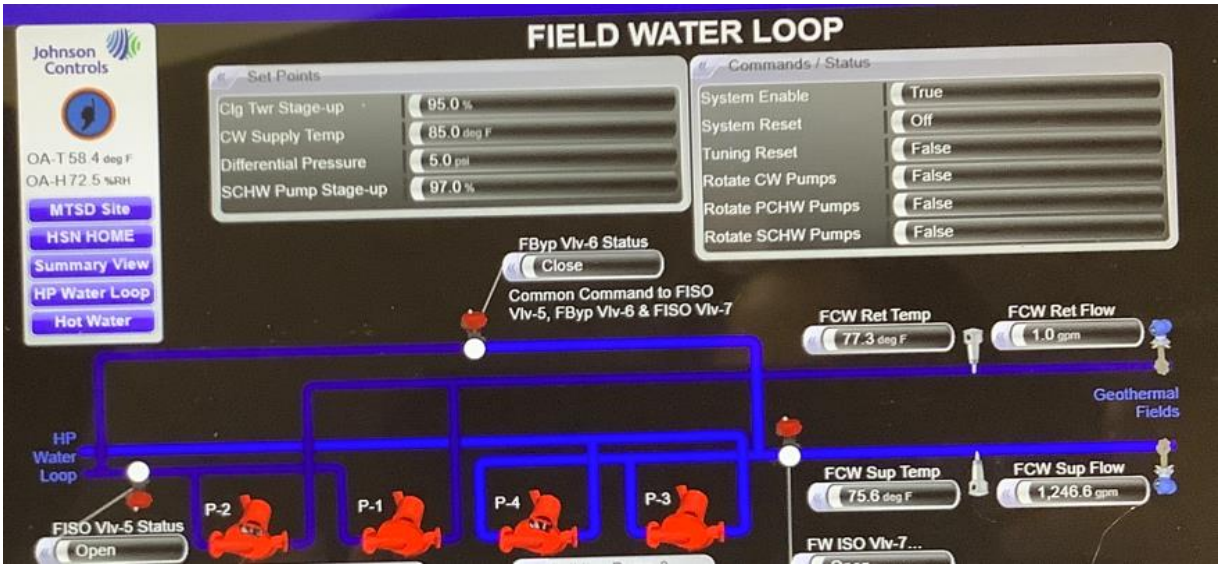
EVAPCO One-Cell Cooling Tower

40 hp Variable Flow Condenser Water Pumps (P7 and P8)





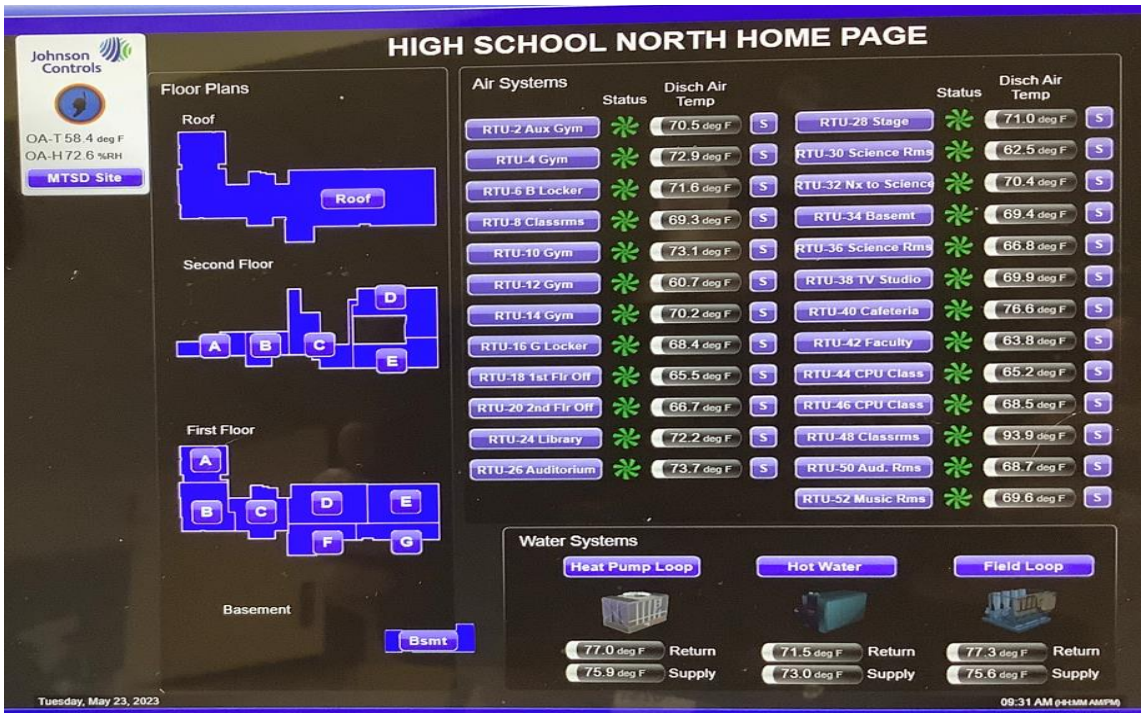
100 hp Geothermal Water Circulation Pumps



Geothermal Water Loop

2.9 Building Automation System (BAS)

A Johnson Metasys BAS controls the HVAC equipment, hot water loop, condenser, and geothermal water loops, WSHPs and package units. The BAS provides equipment scheduling control and monitors and controls space temperatures, supply air temperatures, and humidity.



Johnson BMS Home Page

2.10 Domestic Hot Water

Hot water is produced by two, 1,200 MBh gas-fired non-condensing boilers located in the boiler room. Domestic hot water is stored in a separate 605-gallon tank. Installed in 2002, the boilers have reached the extent of their useful lives and appear in poor condition. They have been evaluated for replacement.

Two, 1.5 hp circulation pumps distribute water to end uses. Hot water pipes are insulated, and the insulation is in good.

Domestic Hot Water (DHW) Boilers

DHW Storage Tank

Circulation Pump

2.11 Food Service Equipment

The facility houses a commercial kitchen and a cafeteria. The cooking system consists of a mix of gas and electric equipment that is used to prepare breakfast and lunch for students. Some of the bulk prepared foods are held in three full-size electric holding cabinets. The cooking equipment is in good condition and well maintained.

The dishwasher is an-ENERGY STAR® high temperature, doo- type unit. It is in good condition as well.

Visit https://www.energystar.gov/products/commercial_food_service_equipment for the latest information on high efficiency food service equipment.

Gas Fired Kitchen Equipment

2.12 Refrigeration

The kitchen has five stand-up refrigerators with either solid or glass doors, and two stand-up freezers with solid doors. There is a small size refrigerator chest. All equipment is either standard or high efficiency and in good condition. There are several commercial ice machines in the kitchen, training room, and main area of the basement.

The kitchen has three walk-in boxes that include one low and one medium temperature freezer with two evaporator fans each, and a single evaporator walk-in cooler. The walk-in boxes have no evaporator fan control system.

Visit https://www.energystar.gov/products/commercial_food_service_equipment for the latest information on high efficiency food service equipment.

Walk-In Cooler

Stand-Up Solid

Glass Doors Refrigerators

2.13 Plug Load and Vending Machines

There are 435 computer workstations throughout the facility. Plug loads throughout the building include general café and office equipment. There are classroom typical loads such as smartboards and projectors. Additional loads typically associated with secondary schools include library and TV studio equipment, and a kiln.

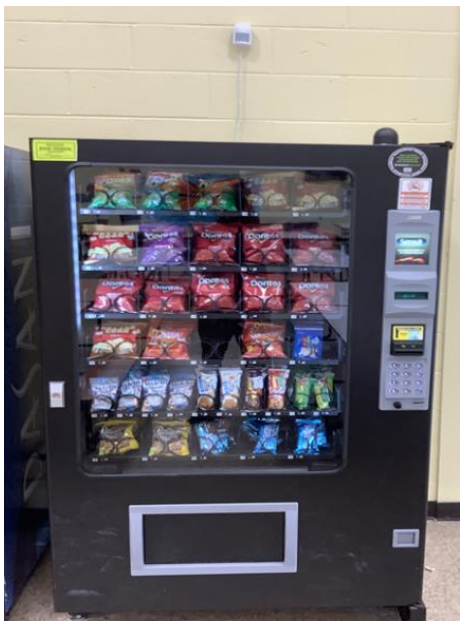
There are also typical office loads such as scanner/copiers, small printers, microwaves, and mini fridges; the site also has server closets. There are twenty-one residential-style refrigerators throughout the facility that are in good condition.

There are two glass fronted refrigerated beverage vending machines and a non-refrigerated vending machine all located in the cafeteria. Vending machines are equipped with occupancy-based controls.

Copier/Scanner

Residential-Style Refrigerator

Refrigerated Vending Machines



Non-Refrigerated Vending Machines

2.14 Water-Using Systems

There are several restrooms with toilets, urinals, and sinks. Faucet flows have usage that is relatively low, except some units with faucet flows rated as 2.0 gallons per minute (gpm). Toilets are rated at 2.5 gallons per flush (gpf) and urinals are rated at 2.0 gpf.

There are restrooms for the training offices and locker rooms with showerheads that are equipped with low flow devices.

Typical Restroom Sink Flow

Locker Room Showerheads

2.15 On-Site Generation

High School North has roof mounted photovoltaic (PV) arrays with 477 kW capacity that provided 650,629 kWh of electricity from August 2021 to July 2022. The panels cover over 90% of the flat roof area. The solar PV provides approximately 15% of the electricity used at the facility in this analysis period.

The facility has two gas fired backup generators that are used to power the servers and the building emergency lights during power outages.

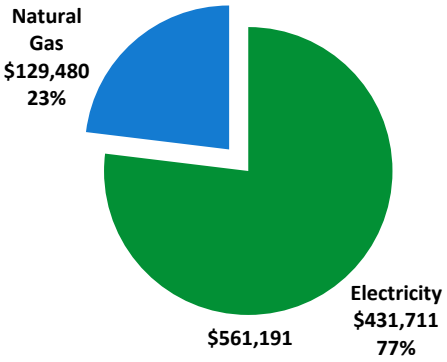
Solar PV Arrays

Inverter

3 Energy Use and Costs

Twelve months of utility billing data are used to develop annual energy consumption and cost data. This information creates a profile of the annual energy consumption and energy costs.

Utility Summary		
Fuel	**Usage**	**Cost**
Electricity	4,335,257 kWh	$431,711
Natural Gas	78,520 Therms	$129,480
Total		**$561,191**



An energy balance identifies and quantifies energy use in your various building systems. This can highlight areas with the most potential for improvement. This energy balance was developed using calculated energy use for each of the end uses noted in the figure.

The energy auditor collects information regarding equipment operating hours, capacity, efficiency, and other operational parameters from facility staff, drawings, and on-site observations. This information is used as the inputs to calculate the existing conditions energy use for the site. The calculated energy use is then compared to the historical energy use and the initial inputs are revised, as necessary, to balance the calculated energy use to the historical energy use.

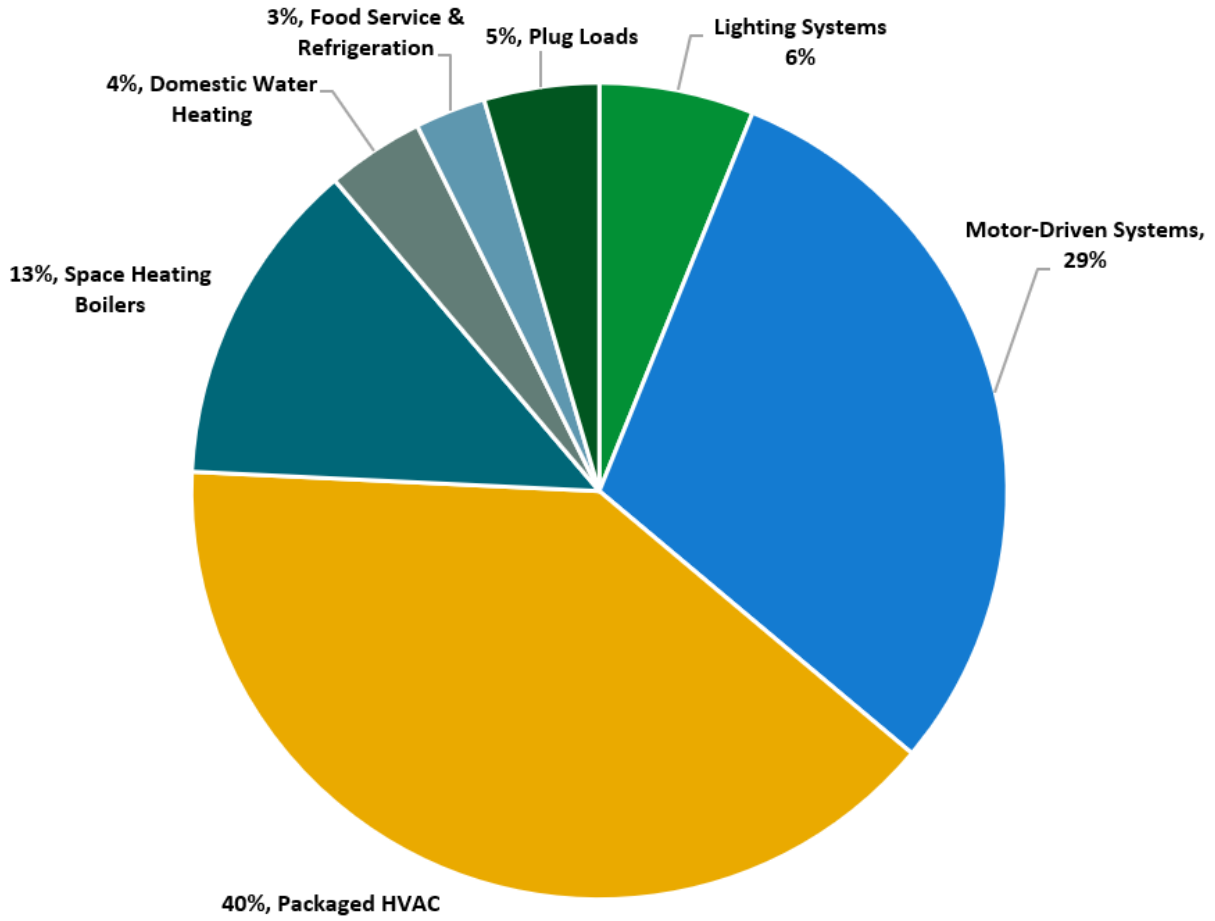
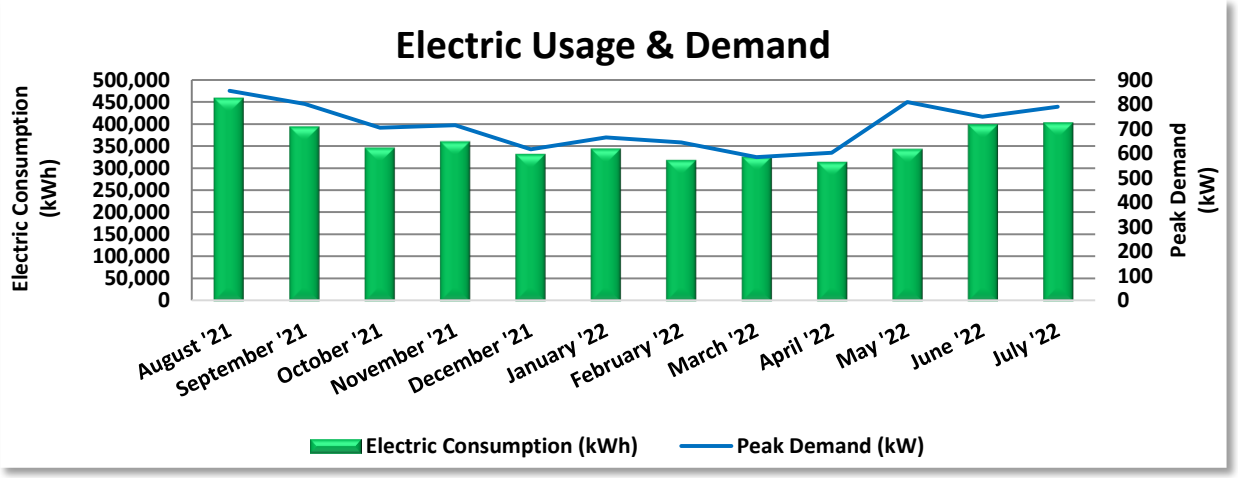


Figure 4 - Energy Balance

3.1 Electricity

JCP&L delivers electricity under rate class General Service Secondary Day/Night Service, with electric production provided by EDF, a third-party supplier.



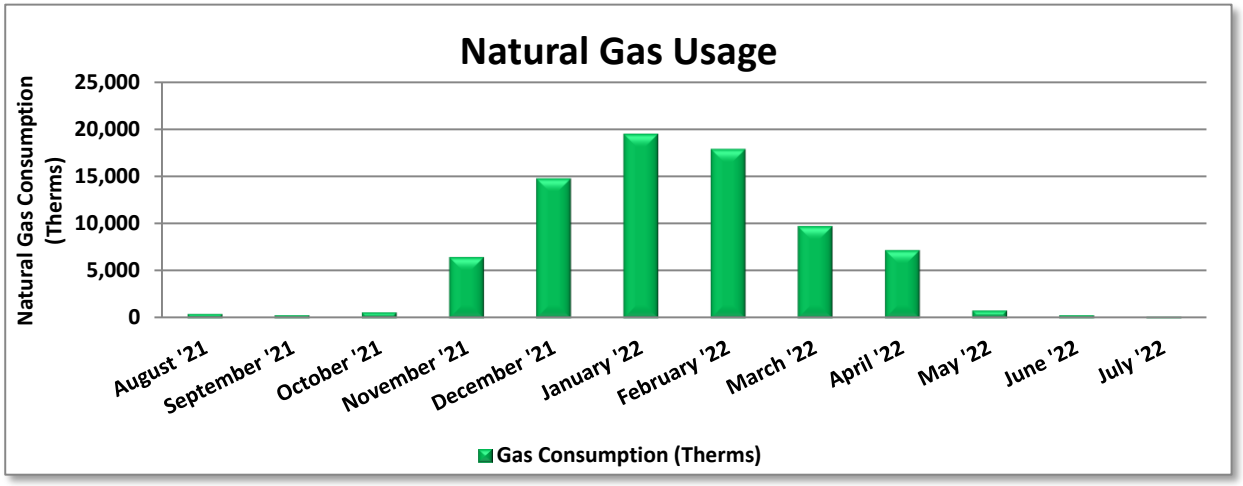
Electric Billing Data					
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Demand Cost	Total Electric Cost
9/8/21	33	457,883	855	$5,671	$44,555
10/7/21	29	393,252	802	$5,319	$38,128
11/5/21	29	345,673	706	$4,501	$34,423
12/7/21	32	360,177	716	$4,566	$36,588
1/6/22	30	331,550	616	$4,549	$34,308
2/6/22	31	343,919	665	$4,911	$35,563
3/7/22	29	318,318	645	$4,762	$32,460
4/7/22	31	325,658	585	$4,315	$31,761
5/6/22	29	313,933	603	$4,474	$30,480
6/9/22	34	343,329	809	$6,005	$35,352
7/8/22	29	398,631	750	$5,566	$39,690
8/6/22	29	402,934	791	$5,242	$38,404
Totals	**365**	**4,335,257**	**855**	**$59,881**	**$431,711**
Annual	**365**	**4,335,257**	**855**	**$59,881**	**$431,711**

Notes:

- Peak demand of 855 kW occurred in August '21.
- Average demand over the past 12 months was 712 kW.
- The average electric cost over the past 12 months was $0.100/kWh, which is the blended rate that includes energy supply, distribution, demand, and other charges. This report uses this blended rate to estimate energy cost savings.

3.2 Natural Gas

NJ Natural Gas delivers natural gas under rate class GSL, with natural gas supply provided by Direct Energy, a third-party supplier.



Gas Billing Data			
Period Ending	**Days in Period**	**Natural Gas Usage (Therms)**	**Natural Gas Cost**
8/26/21	28	459	$2,752
9/27/21	32	347	$2,662
10/26/21	29	646	$2,925
11/24/21	29	6,481	$8,027
12/29/21	35	14,757	$17,219
1/28/22	30	19,484	$28,253
3/2/22	33	17,857	$27,040
3/30/22	28	9,731	$15,766
5/12/22	43	7,211	$14,088
5/31/22	19	834	$3,295
6/28/22	28	326	$3,790
7/28/22	30	171	$3,308
Totals	**364**	**78,305**	**$129,125**
Annual	**365**	**78,520**	**$129,480**

Notes:

- The average gas cost for the past 12 months is $1.649/therm, which is the blended rate used throughout the analysis.
- Natural gas usage profile reflects that the main usage is during the heating season.

3.3 Benchmarking

Your building was benchmarked using the United States Environmental Protection Agency's (EPA) *Portfolio Manager®* software. Benchmarking compares your building's energy use to that of similar buildings across the country, while neutralizing variations due to location, occupancy, and operating hours. Some building types can be scored with a 1-100 ranking of a building's energy performance relative to the national building market. A score of 50 represents the national average and a score of 100 is best.

This ENERGY STAR benchmarking score provides a comprehensive snapshot of your building's energy performance. It assesses the building's physical assets, operations, and occupant behavior, which is compiled into a quick and easy-to-understand score.

Benchmarking Score	34

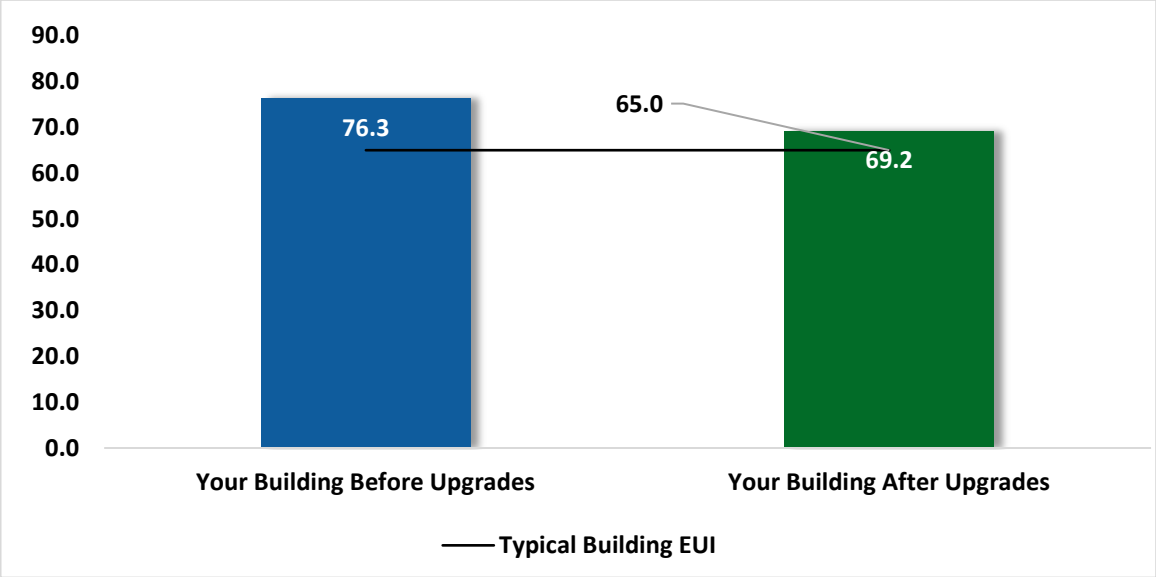


Figure 5 - Energy Use Intensity Comparison[3]

This building performs at below the national average. This report contains suggestions about how to improve building performance and reduce energy costs.

Energy use intensity (EUI) measures energy consumption per square foot and is the standard metric for comparing buildings' energy performance. A lower EUI means better performance and less energy consumed. Several factors can cause a building to vary from typical energy usage. Local weather conditions, building age and insulation levels, equipment efficiency, daily occupancy hours, changes in occupancy throughout the year, equipment operating hours, and occupant behavior all contribute to a building's energy use and the benchmarking score.

[3] Based on all evaluated ECMs

Tracking Your Energy Performance

Keeping track of your energy use on a monthly basis is one of the best ways to keep energy costs in check. Update your utility information in Portfolio Manager regularly, so that you can keep track of your building's performance.

We have created a Portfolio Manager account for your facility and have already entered the monthly utility data shown above for you. Account login information for your account will be sent via email.

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.

For more information on ENERGY STAR and Portfolio Manager, visit their website.

4 Energy Conservation Measures

The goal of this audit report is to identify and evaluate potential energy efficiency improvements and provide information about the cost effectiveness of those improvements. Most energy conservation measures have received preliminary analysis of feasibility, which identifies expected ranges of savings. This level of analysis is typically sufficient to demonstrate project cost-effectiveness and help prioritize energy measures.

Calculations of energy use and savings are based on the current version of the *New Jersey's Clean Energy Program Protocols to Measure Resource Savings*, which is approved by the NJBPU. Further analysis or investigation may be required to calculate more precise savings based on specific circumstances.

Operation and maintenance costs for the proposed new equipment will generally be lower than the current costs for the existing equipment—especially if the existing equipment is at or past its normal useful life. We have conservatively assumed there to be no impact on overall maintenance costs over the life of the equipment.

Financial incentives in this report are based on the previously run state rebate program SmartStart, which has been retired. Now, all investor-owned gas and electric utility companies are offering complementary energy efficiency programs directly to their customers. Some measures and proposed upgrades may be eligible for higher incentives than those shown below. The incentives in the summary tables should be used for high-level planning purposes. To verify incentives, reach out to your utility provider or visit the NJCEP website for more information.

For a detailed list of the locations and recommended energy conservation measures for all inventoried equipment, see Appendix A: Equipment Inventory & Recommendations.

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**26,324**	**1.7**	**-2**	**$2,584**	**$11,468**	**$2,890**	**$8,578**	**3.3**	**26,245**
ECM 1	Install LED Fixtures	Yes	15,563	0.0	0	$1,550	$10,111	$2,700	$7,411	4.8	15,672
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,026	0.1	0	$99	$152	$15	$137	1.4	1,008
ECM 3	Retrofit Fixtures with LED Lamps	Yes	9,735	1.6	-2	$936	$1,206	$175	$1,031	1.1	9,565
Lighting Control Measures			**14,841**	**2.6**	**-3**	**$1,427**	**$22,074**	**$2,630**	**$19,444**	**13.6**	**14,581**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	14,841	2.6	-3	$1,427	$22,074	$2,630	$19,444	13.6	14,581
Unitary HVAC Measures			**219,276**	**124.4**	**0**	**$21,836**	**$1,315,583**	**$33,997**	**$1,281,586**	**58.7**	**220,810**
ECM 5	Install High Efficiency Air Conditioning Units	No	1,679	1.0	0	$167	$15,900	$546	$15,353	91.8	1,691
ECM 6	Install High Efficiency Heat Pumps	No	217,597	123.5	0	$21,669	$1,299,683	$33,450	$1,266,233	58.4	219,119
HVAC System Improvements			**14,552**	**0.0**	**121**	**$3,437**	**$57,096**	**$0**	**$57,096**	**16.6**	**28,766**
ECM 7	Implement Demand Control Ventilation (DCV)	No	14,552	0.0	121	$3,437	$57,096	$0	$57,096	16.6	28,766
Domestic Water Heating Upgrade			**0**	**0.0**	**112**	**$1,841**	**$171,260**	**$25**	**$171,235**	**93.0**	**13,070**
ECM 8	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	106	$1,744	$171,210	$0	$171,210	98.2	12,384
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	6	$97	$50	$25	$25	0.3	686
Food Service & Refrigeration Measures			**4,505**	**0.2**	**0**	**$449**	**$7,576**	**$525**	**$7,051**	**15.7**	**4,536**
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	No	983	0.1	0	$98	$1,517	$200	$1,317	13.4	990
ECM 11	Refrigeration Controls	No	3,522	0.0	0	$351	$6,059	$325	$5,734	16.4	3,546
Custom Measures			**176,505**	**0.0**	**332**	**$23,057**	**$118,720**	**$0**	**$118,720**	**5.1**	**216,652**
ECM 12	Retro-Commissioning Study	Yes	176,505	0.0	332	$23,057	$118,720	$0	$118,720	5.1	216,652
TOTALS			**456,003**	**128.9**	**559**	**$54,630**	**$1,703,777**	**$40,067**	**$1,663,710**	**30.5**	**524,661**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

Figure 6 – All Evaluated ECMs

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**26,324**	**1.7**	**-2**	**$2,584**	**$11,468**	**$2,890**	**$8,578**	**3.3**	**26,245**
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	1,026	0.1	0	$99	$152	$15	$137	1.4	1,008
ECM 3	Retrofit Fixtures with LED Lamps	9,735	1.6	-2	$936	$1,206	$175	$1,031	1.1	9,565
Lighting Control Measures		**14,841**	**2.6**	**-3**	**$1,427**	**$22,074**	**$2,630**	**$19,444**	**13.6**	**14,581**
ECM 4	Install Occupancy Sensor Lighting Controls	14,841	2.6	-3	$1,427	$22,074	$2,630	$19,444	13.6	14,581
Domestic Water Heating Upgrade		**0**	**0.0**	**6**	**$97**	**$50**	**$25**	**$25**	**0.3**	**686**
ECM 9	Install Low-Flow DHW Devices	0	0.0	6	$97	$50	$25	$25	0.3	686
Custom Measures		**176,505**	**0.0**	**332**	**$23,057**	**$118,720**	**$0**	**$118,720**	**5.1**	**216,652**
ECM 12	Retro-Commissioning Study	176,505	0.0	332	$23,057	$118,720	$0	$118,720	5.1	216,652
TOTALS		**217,670**	**4.3**	**333**	**$27,165**	**$152,313**	**$5,545**	**$146,767**	**5.4**	**258,165**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

Figure 7 – Cost Effective ECMs

4.1 Lighting

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**26,324**	**1.7**	**-2**	**$2,579**	**$11,468**	**$2,890**	**$8,578**	**3.3**	**26,245**
ECM 1	Install LED Fixtures	15,563	0.0	0	$1,546	$10,111	$2,700	$7,411	4.8	15,672
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	1,026	0.1	0	$98	$152	$15	$137	1.4	1,008
ECM 3	Retrofit Fixtures with LED Lamps	9,735	1.6	-2	$934	$1,206	$175	$1,031	1.1	9,565

When considering lighting upgrades, we suggest using a comprehensive design approach that simultaneously upgrades lighting fixtures and controls to maximize energy savings and improve occupant lighting. Comprehensive design will also consider appropriate lighting levels for different space types to make sure that the right amount of light is delivered where needed. If conversion to LED light sources is proposed, we suggest converting all of a specific lighting type (e.g., linear fluorescent) to LED lamps to minimize the number of lamp types in use at the facility, which should help reduce future maintenance costs.

ECM 1: Install LED Fixtures

Replace existing fixtures containing high pressure sodium lamps with new LED light fixtures. This measure saves energy by installing LEDs, which use less power than other technologies with a comparable light output.

In some cases, HID fixtures can be retrofit with screw-based LED lamps. Replacing an existing HID fixture with a new LED fixture will generally provide better overall lighting optics; however, replacing the HID lamp with a LED screw-in lamp is typically a less expensive retrofit. We recommend you work with your lighting contractor to determine which retrofit solution is best suited to your needs and will be compatible with the existing fixtures.

Maintenance savings may also be achieved since LED lamps last longer than other light sources and therefore do not need to be replaced as often.

Affected Building Areas: outdoor pole mounted fixtures. Note: some or all these exterior fixtures may be utility owned and billed at a fixed rate. We recommend you consult with the utility before initiating this measure.

ECM 2: Retrofit Fluorescent Fixtures with LED Lamps and Drivers

Retrofit fluorescent fixtures by removing the fluorescent tubes and ballasts and replacing them with LED tubes 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 electric components with more efficient lighting technology, which use less power than other lighting technologies but provides equivalent lighting output. Maintenance savings may also be achieved since LED tubes last longer than fluorescent tubes and, therefore, do not need to be replaced as often.

Affected Building Areas: T-12 lamps in the library corridor display cases

ECM 3: Retrofit Fixtures with LED Lamps

Replace fluorescent T8, CFLs and incandescent lamps with LED lamps. Many LED tubes are direct replacements for existing fluorescent tubes and can be installed while leaving the fluorescent fixture ballast in place. LED lamps can be used in existing fixtures as a direct replacement for most other lighting technologies. Be sure to specify replacement lamps that are compatible with existing dimming controls, where applicable. In some circumstances, you may need to upgrade your dimming system for optimum performance.

This measure saves energy by installing LEDs, which use less power than other lighting technologies yet provide equivalent lighting output for the space. Maintenance savings may also be available, as longer-lasting LEDs lamps will not need to be replaced as often as the existing lamps.

Affected Building Areas: linear T8 in IT room, corridor display lights, ticket booth, and some storage rooms

4.2 Lighting Controls

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Control Measures		**14,841**	**2.6**	**-3**	**$1,427**	**$22,074**	**$2,630**	**$19,444**	**13.6**	**14,581**
ECM 4	Install Occupancy Sensor Lighting Controls	14,841	2.6	-3	$1,427	$22,074	$2,630	$19,444	13.6	14,581

Lighting controls reduce energy use by turning off or lowering lighting fixture power levels when not in use. A comprehensive approach to lighting design should upgrade the lighting fixtures and the controls together for maximum energy savings and improved lighting for occupants.

ECM 4: Install Occupancy Sensor Lighting Controls

Install occupancy sensors to control lighting fixtures in areas that are frequently unoccupied, even for short periods. For most spaces, we recommend that lighting controls use dual technology sensors, which reduce the possibility of lights turning off unexpectedly.

Occupancy sensors detect occupancy using ultrasonic and/or infrared sensors. When an occupant enters the space, the lighting fixtures switch to full lighting levels. Most occupancy sensor lighting controls allow users to manually turn fixtures on/off, as needed. Some controls can also provide dimming options.

Occupancy sensors can be mounted on the wall at existing switch locations, mounted on the ceiling, or in remote locations. In general, wall switch replacement sensors are best suited to single occupant offices and other small rooms. Ceiling-mounted or remote mounted sensors are used in large spaces, locations without local switching, and where wall switches are not in the line-of-sight of the main work area.

This measure provides energy savings by reducing the lighting operating hours.

Affected Building Areas: offices, restrooms. conference room, and storage rooms

4.3 Unitary HVAC

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Unitary HVAC Measures		**219,276**	**124.4**	**0**	**$21,836**	**$1,315,583**	**$33,997**	**$1,281,586**	**58.7**	**220,810**
ECM 5	Install High Efficiency Air Conditioning Units	1,679	1.0	0	$167	$15,900	$546	$15,353	91.8	1,691
ECM 6	Install High Efficiency Heat Pumps	217,597	123.5	0	$21,669	$1,299,683	$33,450	$1,266,233	58.4	219,119

Replacing the unitary HVAC units has a long payback period and may not be justifiable based simply on energy considerations. However, most of the units are nearing or have reached the end of their normal useful life. Typically, the marginal cost of purchasing a high efficiency unit can be justified by the marginal savings from the improved efficiency. When the unitary HAVC units are eventually replaced, consider purchasing equipment that exceeds the minimum efficiency required by building codes.

ECM 5: Install High Efficiency Air Conditioning Units

We evaluated replace standard efficiency air conditioning units with high efficiency air conditioning units. 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 and heating load, and the estimated annual operating hours.

Affected Units: 2-ton ductless AC and Liebert condensing unit (serving the IT room)

ECM 6: Install High Efficiency Heat Pumps

We evaluated replacing standard efficiency heat pumps with high efficiency heat pumps. A higher EER or SEER rating indicates a more efficient cooling system, and a higher HSPF 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.

Affected Units: all water source heat pumps

4.4 HVAC Improvements

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
HVAC System Improvements		**14,552**	**0.0**	**121**	**$3,434**	**$57,096**	**$0**	**$57,096**	**16.6**	**28,766**
ECM 7	Implement Demand Control Ventilation (DCV)	14,552	0.0	121	$3,434	$57,096	$0	$57,096	16.6	28,766

ECM 7: Implement Demand Control Ventilation (DCV)

Demand control ventilation (DCV) is a control strategy that monitors the indoor air's carbon dioxide (CO_2) content to measure room occupancy. This data is used to regulate the amount of outdoor air provided to the space for ventilation.

Standard ventilation systems often provide outside air based on a space's estimated maximum occupancy but not actual occupancy. During low occupancy periods, the space may then be over ventilated. This wastes energy through heating and cooling the excess outside air flow. DCV reduces unnecessary outdoor air intake by regulating ventilation based on actual occupancy levels. DCV is most suited for facilities where occupancy levels vary significantly from hour to hour and day to day.

Energy savings associated with DCV are based on hours of operation, space occupancy, outside air reduction, and other factors. Energy savings results from eliminating unnecessary ventilation and space conditioning. Implementation of this measure is dependent upon having a building automation system (BAS) or other smart building control system connected to the space conditioning equipment serving the noted areas. We evaluated configuring demand control for HVAC systems in the following areas:

Affected Building Areas: gymnasiums, cafeteria, library, locker rooms, auditorium, outside bubble

4.5 Domestic Water Heating

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Domestic Water Heating Upgrade		**0**	**0.0**	**112**	**$1,841**	**$171,260**	**$25**	**$171,235**	**93.0**	**13,070**
ECM 8	Install High Efficiency Gas-Fired Water Heater	0	0.0	106	$1,744	$171,210	$0	$171,210	98.2	12,384
ECM 9	Install Low-Flow DHW Devices	0	0.0	6	$97	$50	$25	$25	0.3	686

ECM 8: Install High Efficiency Gas-Fired Water Heater

We evaluated replacing the existing tank waters heater with a high-efficiency condensing tank waters heater. Energy savings result from the increased efficiency of the unit, which uses less gas to heat water, and fewer operating hours to maintain the tank water temperature.

ECM 9: Install Low-Flow DHW Devices

Install low-flow devices to reduce overall hot water demand. The following low-flow devices are recommended to reduce hot water usage:

Device	Flow Rate
Faucet aerators (lavatory)	0.5 gpm
Faucet aerator (kitchen)	1.5 gpm
Showerhead	2.0 gpm
Pre-rinse spray valve (kitchen)	1.28 gpm

Low-flow devices reduce the overall water flow from the fixture, while still providing adequate pressure for washing. Additional cost savings may result from reduced water usage.

4.6 Food Service & Refrigeration Measures

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Food Service & Refrigeration Measures		**4,505**	**0.2**	**0**	**$448**	**$7,576**	**$525**	**$7,051**	**15.8**	**4,536**
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	983	0.1	0	$98	$1,517	$200	$1,317	13.5	990
ECM 11	Refrigeration Controls	3,522	0.0	0	$350	$6,059	$325	$5,734	16.4	3,546

ECM 10: Refrigerator/Freezer Case Electrically Commutated Motors

We evaluated replacing shaded pole or permanent split capacitor (PSC) motors with electronically commutated (EC) motors in walk-in coolers and freezers. Fractional horsepower EC motors are significantly more efficient than mechanically commutated, brushed motors, particularly at low speeds or partial load. By using variable-speed technology, EC motors can optimize fan usage. Because these motors are brushless and use DC power, losses due to friction and phase shifting are eliminated.

Savings for this measure consider both the increased efficiency of the motor as well as the reduction in refrigeration load due to motor heat loss.

ECM 11: Refrigeration Controls

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

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

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

Many walk-in coolers and freezers have evaporator fans that run continuously. The measure adds a control system feature to automatically shut off evaporator fans when not needed.

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

4.7 Custom Measures

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Custom Measures		**176,505**	**0.0**	**332**	**$23,057**	**$118,720**	**$0**	**$118,720**	**5.1**	**216,652**
ECM 12	Retro-Commissioning Study	176,505	0.0	332	$23,057	$118,720	$0	$118,720	5.1	216,652

ECM 12: Retro-Commissioning Study

Due to the complexity of today's HVAC systems and controls a thorough analysis and rebalance of heating, ventilation, and cooling systems should periodically be conducted. There are indications at this site that systems may not be operating correctly or as efficiently as they could be. One important tool available to building operators to ensure proper system operation is retro-commissioning.

Retro-commissioning is a common practice recommended by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to be implemented every few years. We recommend that you contact a reputable engineering firm that specializes in energy control systems and retro-commissioning. Ask them to propose a scope of work and an outline of the procedures and processes to be implemented, including a schedule and the roles of all responsible parties.

Once goals and responsibilities are established, the objective of the investigation process is to understand how the building is currently operating, identify the issues, and determine the most cost-effective way to improve performance. The retro-commissioning agent will review building documentation, interview building occupants, and inspect and test the equipment. Information is then compiled into a report and shared with facility staff, who will select which recommendations to implement after reviewing the findings.

The implementation phase puts the selected processes into place. Typical measures may include sensor calibration, equipment schedule changes, damper linkage repair and similar relatively low-cost adjustments—although more expensive sophisticated programming and building control system upgrades may be warranted. Approved measures may be implemented by the agent, the building staff, or by subcontractors. Typically, a combination of these individuals makes up the retro-commissioning team.

After the approved measures are implemented, the team will verify that the changes are working as expected. Baseline and post-case measurements will allow building staff to monitor equipment and ensure that the benefits are maintained.

A high-level evaluation of potential savings and costs is provided for demonstration purposes only. It is a screening evaluation for the potential in HVAC control improvements. Based on industry standards and previous project experience, the potential energy savings may be up to 15% of existing HVAC energy use. We estimate the cost of retro-commissioning studies and control improvements of $0.40 per square foot. Actual savings and costs will need to be outlined by the specific contractor engaged to perform the study. For the purposes of this report, we have conservatively estimated savings to be 5.0% of the HVAC energy consumption baseline.

5 Energy Efficient Best Practices

A whole building maintenance plan will extend equipment life; improve occupant comfort, health, and safety; and reduce energy and maintenance costs.

Operation and maintenance (O&M) plans enhance the operational efficiency of HVAC and other energy intensive systems and could save 5% –20% of the energy usage in your building without substantial capital investment. A successful plan includes your records of energy usage trends and costs, building equipment lists, current maintenance practices, and planned capital upgrades, and it incorporates your ideas for improved building operation. Your plan will address goals for energy-efficient operation, provide detail on how to reach the goals, and outline procedures for measuring and reporting whether goals have been achieved.

You may already be doing some of these things—see our list below for potential additions to your maintenance plan. Be sure to consult with qualified equipment specialists for details on proper maintenance and system operation.

Energy Tracking with ENERGY STAR Portfolio Manager

You've heard it before—you cannot manage what you do not measure. ENERGY STAR Portfolio Manager is an online tool that you can use to measure and track energy and water consumption, as well as greenhouse gas emissions[4]. Your account has already been established. Now you can continue to keep tabs on your energy performance every month.

Doors and Windows

Close exterior doors and windows in heated and cooled areas. Leaving doors and windows open leads to a loss of heat during the winter and chilled air during the summer. Reducing air changes per hour can lead to increased occupant comfort as well as heating and cooling savings, especially when combined with proper HVAC controls and adequate ventilation.

Lighting Maintenance

Clean lamps, reflectors and lenses of dirt, dust, oil, and smoke buildup every six to twelve months. Light levels decrease over time due to lamp aging, lamp and ballast failure, and buildup of dirt and dust. Together, this can reduce total light output by up to 60% while still drawing full power.

In addition to routine cleaning, developing a maintenance schedule can ensure that maintenance is performed regularly, and it can reduce the overall cost of fixture re-lamping and re-ballasting. Group re-lamping and re-ballasting maintains lighting levels and minimizes the number of site visits by a lighting technician or contractor, decreasing the overall cost of maintenance.

[4] https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager.

Lighting Controls

As part of a lighting maintenance schedule, test lighting controls to ensure proper functioning. For occupancy sensors, this requires triggering the sensor and verifying that the sensor's timer settings are correct. For daylight and photocell sensors, maintenance involves cleaning sensor lenses and confirming that setpoints and sensitivity are configured properly. Adjust exterior lighting time clock controls seasonally as needed to match your lighting requirements.

Motor Maintenance

Motors have many moving parts. As these parts degrade over time, the efficiency of the motor is reduced. Routine maintenance prevents damage to motor components. Routine maintenance should include 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.

Economizer Maintenance

Economizers can significantly reduce cooling system load. A malfunctioning economizer can increase the amount of heating and mechanical cooling required by introducing excess amounts of cold or hot outside air. Common economizer malfunctions include broken outdoor thermostat or enthalpy control or dampers that are stuck or improperly adjusted.

Periodic inspection and maintenance will keep economizers working in sync with the heating and cooling system. This maintenance should be part of annual system maintenance, and it 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.

AC System Evaporator/Condenser Coil Cleaning

Dirty evaporator and condenser coils restrict air flow and restrict heat transfer. This increases the loads on the evaporator and condenser fan and decreases overall cooling system performance. Keeping the coils clean allows the fans and cooling system to operate more efficiently.

HVAC Filter Cleaning and Replacement

Air filters should be checked regularly (often monthly) and cleaned or replaced when appropriate. Air filters reduce indoor air pollution, increase occupant comfort, and help keep equipment operating efficiently. If the building has a building management system, consider installing a differential pressure switch across filters to send an alarm about premature fouling or overdue filter replacement. Over time, filters become less and less effective as particulate buildup increases. Dirty filters also restrict air flow through the air conditioning or heat pump system, which increases the load on the distribution fans.

Ductwork Maintenance

Duct maintenance has two primary goals: keep the ducts clean to avoid air quality problems and seal leaks to save energy. Check for cleanliness, obstructions that block airflow, water damage, and leaks. Ducts should be inspected at least every two years.

The biggest symptoms of clogged air ducts are differing temperatures throughout the building and areas with limited airflow from supply registers. If a particular air duct is clogged, then air flow will only be cut off to some rooms in the building—not all of them. The reduced airflow will make it more difficult for those areas to reach the temperature setpoint, which will cause the HVAC system to run longer to cool or heat that area properly. If you suspect clogged air ducts, ensure that all areas in front of supply registers are clear of items that may block or restrict air flow, and you should check for fire dampers or balancing dampers that have failed closed.

Duct leakage in commercial buildings can account for 5%–25% of the supply airflow. In the case of rooftop air handlers, duct leakage can occur to the outside of the building wasting conditioned air. Check ductwork for leakage. Eliminating duct leaks can improve ventilation system performance and reduce heating and cooling system operation.

Distribution system losses are dependent on-air system temperature, the size of the distribution system, and the level of insulation of the ductwork. Significant energy savings can be achieved when insulation has not been well maintained. When the insulation is missing or worn, the system efficiency can be significantly reduced. This measure saves energy by reducing heat transfer in the distribution system.

Boiler Maintenance

Many boiler problems develop slowly over time, so regular inspection and maintenance is essential to keeping the heating system running efficiently and preventing expensive repairs. Annual tune-ups should include a combustion analysis to analyze the exhaust from the boilers and to ensure the boiler is operating safely and efficiently. Boilers should be cleaned according to the manufacturer's instructions to remove soot and scale from the boiler tubes to improve heat transfer.

Optimize HVAC Equipment Schedules

Energy management systems (BAS) typically provide advanced controls for building HVAC systems, including chillers, boilers, air handling units, rooftop units and exhaust fans. The BAS monitors and reports operational status, schedules equipment start and stop times, locks out equipment operation based on outside air or space temperature, and often optimizes damper and valve operation based on complex algorithms. These BAS features, when in proper adjustment, can improve comfort for building occupants and save substantial energy.

Know your BAS scheduling capabilities. Regularly monitor HVAC equipment operating schedules and match them to building operating hours in order to eliminate unnecessary equipment operation and save energy. Monitoring should be performed often at sites with frequently changing usage patterns – daily in some cases. We recommend using the *optimal start* feature of the BAS (if available) to optimize the building warmup sequence. Most BAS scheduling programs provide for holiday schedules, which can be used during reduced use or shutdown periods. Finally, many systems are equipped with a one-time override function, which can be used to provide additional space conditioning due to a one-time, special event. When available this override feature should be used rather than changing the base operating schedule.

Water Heater Maintenance

The lower the supply water temperature that is used for hand washing sinks, the less energy is needed to heat the water. Reducing the temperature results in energy savings and the change is often unnoticeable to users. Be sure to review the domestic water temperature requirements for sterilizers and dishwashers as you investigate reducing the supply water temperature.

Also, preventative maintenance can extend the life of the system, maintain energy efficiency, and ensure safe operation. At least once a year, follow manufacturer instructions to 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. Annual checks should include checks for:

- Leaks or heavy corrosion on the pipes and valves.
- 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 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 more than three years old, have a technician inspect the sacrificial anode annually.

Procurement Strategies

Purchasing efficient products reduces energy costs without compromising quality. Consider modifying your procurement policies and language to require ENERGY STAR or WaterSense products where available.

6 On-site Generation

You don't have to look far in New Jersey to see one of the thousands of solar electric systems providing clean power to homes, businesses, schools, and government buildings. On-site generation includes both renewable (e.g., solar, wind) and non-renewable (e.g., fuel cells) technologies that generate power to meet all or a portion of the facility's electric energy needs. Also referred to as distributed generation, these systems contribute to greenhouse gas (GHG) emission reductions, demand reductions, and reduced customer electricity purchases, which results in improved electric grid reliability through better use of transmission and distribution systems.

Preliminary screenings were performed to determine if an on-site generation measure could be a cost-effective solution for your facility. Before deciding to install an on-site generation system, we recommend conducting a feasibility study to analyze 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 Solar Photovoltaic

Photovoltaic (PV) panels convert sunlight into electricity. Individual panels are combined into an array that produces direct current (DC) electricity. The DC current is converted to alternating current (AC) through an inverter. The inverter is then connected to the building's electrical distribution system.

A preliminary screening based on the facility's electric demand, size and location of free area, and shading elements shows that the facility has no potential for installing a PV array.

This facility does not appear to meet the minimum criteria for an additional cost-effective solar PV installation. To be cost-effective, a solar PV array needs certain minimum criteria, such as sufficient and sustained electric demand and sufficient flat or south-facing rooftop or other unshaded space on which to place the PV panels.

The graphic below displays the results of the PV potential screening conducted as a part of this audit. The position of each slider indicates the potential (potential increases to the right) that each factor contributes to the overall site potential.

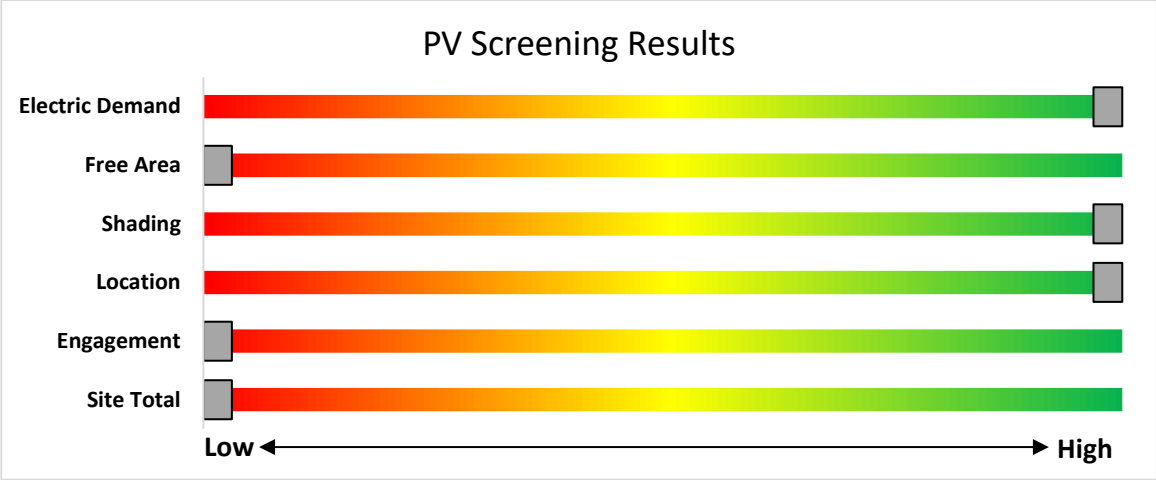


Figure 8 - Photovoltaic Screening

Successor Solar Incentive Program (SuSI)

The SuSI program replaces the SREC Registration Program (SRP) and the Transition Incentive (TI) program. The SuSI program is used to register and certify solar projects in New Jersey. Rebates are not available for solar projects. Solar projects may qualify to earn SREC- IIs (Solar Renewable Energy Certificates-II), however, the project owners *must* register their solar projects prior to the start of construction to establish the project's eligibility.

Get more information about solar power in New Jersey or find a qualified solar installer who can help you decide if solar is right for your building:

Successor Solar Incentive Program (SuSI): https://www.njcleanenergy.com/renewable-energy/programs/susi-program

- **Basic Info on Solar PV in NJ**: www.njcleanenergy.com/whysolar
- **NJ Solar Market FAQs**: www.njcleanenergy.com/renewable-energy/program-updates-and-background-information/solar-transition/solar-market-faqs.
- **Approved Solar Installers in the NJ Market**: 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) generates electricity at the facility and puts waste heat energy to good use. Common types of CHP systems are reciprocating engines, microturbines, fuel cells, backpressure steam turbines, and (at large facilities) gas turbines.

CHP systems typically produce a portion of the electric power used on-site, with the balance of electric power needs supplied by the local utility company. The heat is used to supplement (or replace) existing boilers and provide space heating and/or domestic hot water heating. Waste heat can also be routed through absorption chillers for space cooling.

The key criteria used for screening is the amount of time that the CHP system would operate at full load and the facility's ability to use the recovered heat. Facilities with a continuous need 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 no potential for installing a cost-effective CHP system.

Based on a preliminary analysis, the facility does not appear to meet the minimum requirements for a cost-effective CHP installation. The low or infrequent thermal load, and lack of space for siting the equipment are the most significant factors contributing to the lack of CHP potential.

The graphic below displays the results of the CHP potential screening conducted as a part of this audit. The position of each slider indicates the potential (potential increases to the right) that each factor contributes to the overall site potential.

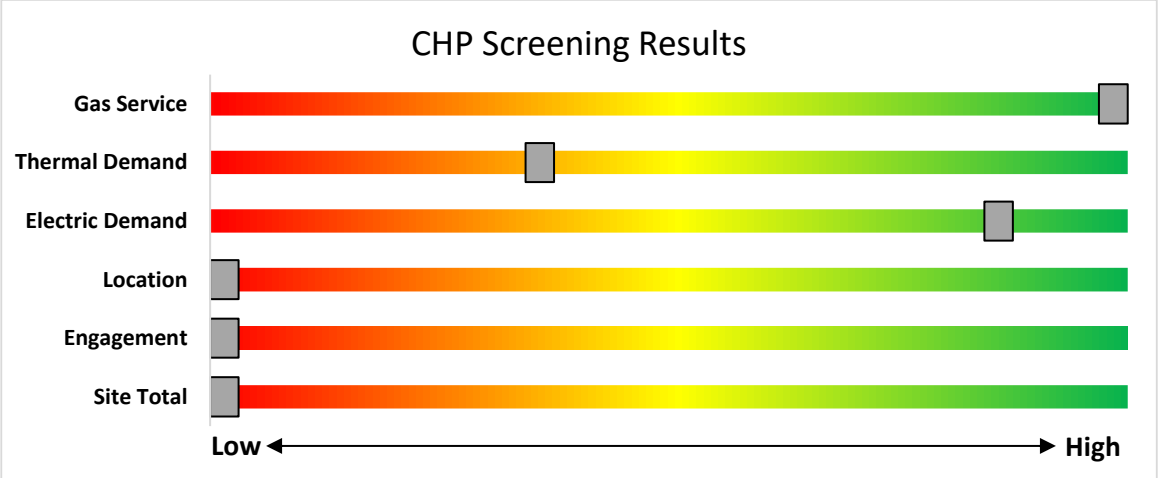


Figure 9 - Combined Heat and Power Screening

Find a qualified firm that specializes in commercial CHP cost assessment and installation: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/tools-and-resources/tradeally/approved_vendorsearch/.

7 Electric Vehicles (EV)

All electric vehicles (EVs) have an electric motor instead of an internal combustion engine. EVs function by plugging into a charge point, taking electricity from the grid, and then storing it in rechargeable batteries. Although electricity production may contribute to air pollution, the U.S. EPA categorizes all-electric vehicles as zero-emission vehicles because they produce no direct exhaust or tailpipe emissions.

EVs are typically more expensive than similar conventional and hybrid vehicles, although some cost can be recovered through fuel savings, federal tax credit, or state incentives.

7.1 Electric Vehicle Charging

EV charging stations provide a means for electric vehicle operators to recharge their batteries at a facility. While many EV drivers charge at home, others do not have access to regular home charging, and the ability to charge at work or in public locations is critical to making EVs practical for more drivers. Charging can also be used for electric fleet vehicles, which can reduce fuel and maintenance costs for fleets that replace gas or diesel vehicles with EVs.

EV charging comes in three main types. For this assessment, the screening considers addition of Level 2 charging, which is most common at workplaces and other public locations. Depending on the site type and usage, other levels of charging power may be more appropriate.

The preliminary assessment of EV charging at the facility shows that there is high potential for adding EV chargers to the facility's parking, based on potential costs of installation and other site factors.

The primary costs associated with installing EV charging are the charger hardware and the cost to extend power from the facility to parking spaces. This may include upgrades to electric panels to serve increased loads.

The type and size of the parking area impact the costs and feasibility of adding EV charging. Parking structure installations can be less costly than surface lot installations as power may be readily available, and equipment and wiring can be surface mounted. Parking lot installations often require trenching through concrete or asphalt surface. Large parking areas provide greater flexibility in charger siting than smaller lots.

The location and capacity of facility electric panels also impact charger installation costs. A Level 2 charger generally requires a dedicated 208-240V, 40 Amp circuit. The electric panel nearest the planned installation may not have available capacity and may need to be upgraded to serve new EV charging loads. Alternatively, chargers could be powered from a more distant panel. The distance from the panel to the location of charging stations ties directly to costs, as conduits, cables, and potential trenching costs all increase on a per-foot basis. The more charging stations planned, the more likely it is that additional electrical capacity will be needed.

Other factors to consider when planning for EV charging at a facility include who the intended users are, how long they park vehicles at the site, and whether they will need to pay for the electricity they use.

The graphic below displays the results of the EV charging assessment conducted as part of this audit. The position of each slider indicates the impact each factor has on the feasibility of installing EV charging at the site.

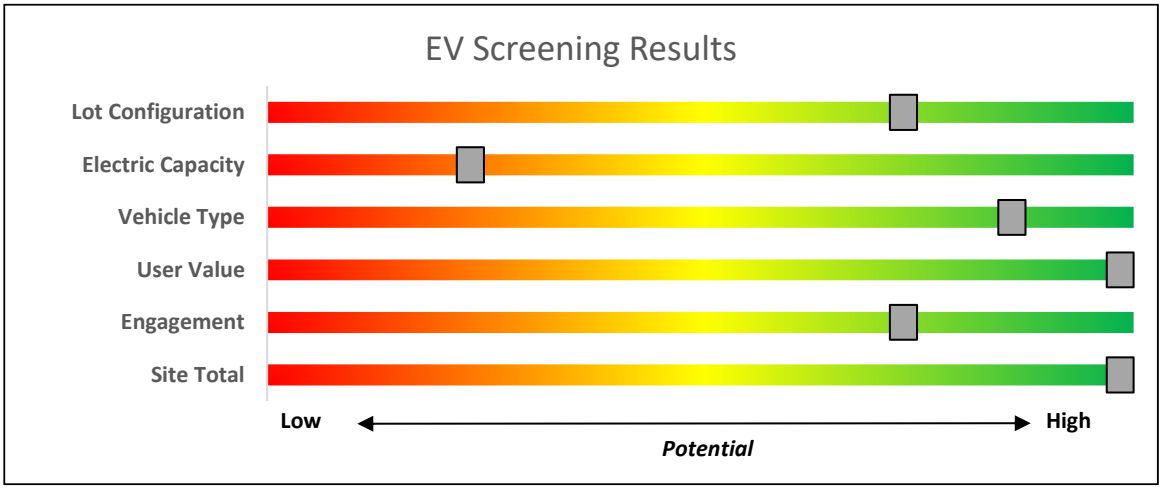


Figure 10 – EV Charger Screening

Electric Vehicle Programs Available

New Jersey is leading the way on electric vehicle (EV) adoption on the East Coast. There are several programs designed to encourage EV adoption in New Jersey, which is crucial to reaching a 100% clean energy future.

NJCEP offers a variety of EV programs for vehicles, charging stations, and fleets. Certain EV charging stations that receive electric utility service from Atlantic City Electric Company (ACE) or Public Service Electric & Gas Company (PSE&G), may be eligible for additional electric vehicle charging incentives directly from the utility. Projects may be eligible for both the incentives offered by this BPU program and incentives offered by ACE or PSE&G, up to 90% of the combined charger purchase and installation costs. Please check ACE or PSE&G program eligibility requirements before purchasing EV charging equipment, as additional conditions on types of eligible chargers may apply for utility incentives.

Both JCP&L and Rockland Electric (RECO) have filed proposals for EV charging programs. BPU staff is currently reviewing those proposals.

For more information and to keep up to date on all EV programs please visit https://www.njcleanenergy.com/commercial-industrial/programs/electric-vehicle-programs.

8 Project Funding and Incentives

Ready to improve your building's performance? New Jersey's Clean Energy Programs and Utility Energy Efficiency Programs can help. Pick the program that works best for you. This section provides an overview of currently available incentive programs in.

8.1 Utility Energy Efficiency Programs

The Clean Energy Act, signed into law by Governor Murphy in 2018, requires New Jersey's investor-owned gas and electric utilities to reduce their customers' use by set percentages over time. To help reach these targets the New Jersey Board of Public Utilities approved a comprehensive suite of energy efficiency programs to be run by the utility companies.

Prescriptive and Custom

The Prescriptive and Custom rebate program through your utility provider offers incentives for installing prescriptive and custom energy efficiency measures at your facility. This program provides an effective mechanism for securing incentives for energy efficiency measures installed individually or as part of a package of energy upgrades. This program serves most common equipment types and sizes.

Equipment Examples

Lighting
Lighting Controls
HVAC Equipment
Refrigeration
Gas Heating
Gas Cooling
Commercial Kitchen Equipment
Food Service Equipment
Variable Frequency Drives
Electronically Commutate Motors
Variable Frequency Drives
Plug Loads Controls
Washers and Dryers
Agricultural
Water Heating

The Prescriptive program provides fixed incentives for specific energy efficiency measures. Prescriptive incentives vary by equipment type. The Custom program provides incentives for more unique or specialized technologies or systems that are not addressed through prescriptive incentives.

Direct Install

Direct Install is a turnkey program available to existing small to medium-sized facilities with an average peak electric demand that does not exceed 200 kW or less over the recent 12-month period. You work directly with a pre-approved contractor who will perform a free energy assessment at your facility, identify specific eligible measures, and provide a clear scope of work for installation of selected measures. Energy efficiency measures may include lighting and lighting controls, refrigeration, HVAC, motors, variable speed drives, and controls

Incentives

The program pays up to 70% of the total installed cost of eligible measures.

How to Participate

To participate in Direct Install, you will work with a participating contractor. The contractor will be paid the measure incentives directly by the program, which will pass on to you in the form of reduced material and implementation costs. This means up to 70% of eligible costs are covered by the Direct Install program, subject to program rules and eligibility, while the remaining percent of the cost is paid to the contractor by the customer.

Engineered Solutions

The Engineered Solutions Program provides tailored energy-efficiency assistance and services to municipalities, universities, schools, hospitals and healthcare facilities (MUSH), non-profit entities, and multifamily buildings. Customers receive expert guided services, including investment-grade energy auditing, engineering design, installation assistance, construction administration, commissioning, and measurement and verification (M&V) services to support the implementation of cost-effective and comprehensive efficiency projects. Engineered Solutions is generally a good option for medium to large sized facilities with a peak demand over 200 kW looking to implement as many measures as possible under a single project to achieve deep energy savings. Engineered Solutions has an added benefit of addressing measures that may not qualify for other programs. Many facilities pursuing an Energy Savings Improvement Program loan also use this program. Incentives for this program are based on project scope and energy savings achieved.

For more information on any of these programs, contact your local utility provider or visit https://www.njcleanenergy.com/transition.

8.2 New Jersey's Clean Energy Programs

Save money while saving the planet! New Jersey's Clean Energy Program is a statewide program that offers incentives, programs, and services that benefit New Jersey residents, businesses, educational, non-profit, and government entities to help them save energy, money, and the environment.

Large Energy Users

The Large Energy Users Program (LEUP) is designed to foster self-directed investment in energy projects. This program is offered to New Jersey's largest energy customers that annually contribute at least $200,000 to the NJCEP aggregate of all buildings/sites. This equates to roughly $5 million in energy costs in the prior fiscal year.

Incentives

Incentives are based on the specifications below. The maximum incentive per entity is the lesser of:

- $4 million
- 75% of the total project(s) cost
- 90% of total NJCEP fund contribution in previous year
- $0.33 per projected kWh saved; $3.75 per projected Therm saved annually

How to Participate

To participate in LEUP, you will first need submit an enrollment application. This program requires all qualified and approved applicants to submit an energy plan that outlines the proposed energy efficiency work for review and approval. Applicants may submit a Draft Energy Efficiency Plan (DEEP), or a Final Energy Efficiency Plan (FEEP). Once the FEEP is approved, the proposed work can begin.

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

Combined Heat and Power

The Combined Heat & Power (CHP) program provides incentives for eligible CHP or waste heat to power (WHP) projects. Eligible CHP or WHP projects must achieve an annual system efficiency of at least 65% (lower heating value, or LHV), based on total energy input and total utilized energy output. Mechanical energy may be included in the efficiency evaluation.

Incentives

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

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

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

How to Participate

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

Successor Solar Incentive Program (SuSI)

The SuSI program replaces the SREC Registration Program (SRP) and the Transition Incentive (TI) program. The program is used to register and certify solar projects in New Jersey. Rebates are not available for solar projects, but owners of solar projects *must* register their projects prior to the start of construction to establish the project's eligibility to earn SREC-IIs (Solar Renewable Energy Certificates-II). SuSI consists of two sub-programs. The Administratively Determined Incentive (ADI) Program and the Competitive Solar Incentive (CSI) Program.

Administratively Determined Incentive (ADI) Program

The ADI Program provides administratively set incentives for net metered residential projects, net metered non-residential projects 5 MW or less, and all community solar projects.

After the registration is accepted, construction is complete, and a complete final as-built packet has been submitted, the project is issued a New Jersey certification number, which enables it to generate New Jersey SREC- IIs.

Market Segments	Size MW dc	Incentive Value ($/SREC II)	Public Entities Incentive Value - $20 Adder ($/SRECII)
Net Metered Residential	All types and sizes	$90	N/A
Small Net Metered Non-Residential located on Rooftop, Carport, Canopy and Floating Solar	Projects smaller than 1 MW	$100	$120
Large Net Metered Non-Residential located on Rooftop, Carport, Canopy and Floating Solar	Projects 1 MW to 5 MW	$90	$110
Small Net Metered Non-Residential Ground Mount	Projects smaller than 1 MW	$85	$105
Large Net Metered Non-Residential Ground Mount	Projects 1 MW to 5 MW	$80	$100
LMI Community Solar	Up to 5 MW	$90	N/A
Non-LMI Community Solar	Up to 5 MW	$70	N/A
Interim Subsection (t)	All types and sizes	$100	N/A

Eligible projects may generate SREC-IIs for 15 years following the commencement of commercial operations which is defined as permission to operate (PTO) from the Electric Distribution Company. After 15 years, projects may be eligible for a NJ Class I REC.

SREC-IIs will be purchased monthly by the SREC-II Program Administrator who will allocate the SREC-IIs to the Load Serving Entities (BGS Providers and Third-Party Suppliers) annually based on their market share of retail electricity sold during the relevant Energy Year.

The ADI Program online portal is now open to new registrations.

Competitive Solar Incentive Program

The Competitive Solar Incentive (CSI) Program will provide competitively set incentives for grid supply projects and net metered non-residential projects greater than 5MW (dc). The program is currently under development. For updates, please continue to check the Solar Proceedings page on the New Jersey's Clean Energy Program website.

Solar projects help the State of New Jersey reach renewable energy goals outlined in the state's Energy Master Plan.

If you are considering installing solar photovoltaics on your building, visit the following link for more information: https://njcleanenergy.com/renewable-energy/programs/susi-program.

Energy Savings Improvement Program

The Energy Savings Improvement Program (ESIP) serves New Jersey's government agencies by financing energy projects. An ESIP is a type of performance contract, whereby school districts, counties, municipalities, housing authorities, and other public and state entities enter into contracts to help finance building energy upgrades. Annual payments are lower than the savings projected from the energy conservation measures (ECMs), ensuring that ESIP projects are cash flow positive for the life of the contract.

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 described above can also be used to help further reduce the total project cost of eligible measures.

How to Participate

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 used 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 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. Carefully consider all alternatives to develop an approach that best meets your needs. A detailed program descriptions and application can be found at www.njcleanenergy.com/ESIP.

ESIP is a program delivered directly by the NJBPU and is not an NJCEP incentive program. As mentioned above, you can use NJCEP incentive programs to help further reduce costs when developing the energy savings plan. Refer to the ESIP guidelines at the link above for further information and guidance on next steps.

9 PROJECT DEVELOPMENT

Energy conservation measures (ECMs) have been identified for your site, and their energy and economic analyses are provided within this LGEA report. Note that some of the identified projects may be mutually exclusive, such as replacing equipment versus upgrading motors or controls. The next steps with project development are to set goals and create a comprehensive project plan. The graphic below provides an overview of the process flow for a typical energy efficiency or renewable energy project. We recommend implementing as many ECMs as possible prior to undertaking a feasibility study for a renewable project. The cyclical nature of this process flow demonstrates the ongoing work required to continually improve building energy efficiency over time. If your building(s) scope of work is relatively simple to implement or small in scope, the measurement and verification (M&V) step may not be required. It should be noted through a typical project cycle, there will be changes in costs based on specific scopes of work, contractor selections, design considerations, construction, etc. The estimated costs provided throughout this LGEA report demonstrate the unburdened turn-key material and labor cost only. There will be contingencies and additional costs at the time of implementation. We recommend comprehensive project planning that includes the review of multiple bids for project work, incorporates potential operations and maintenance (O&M) cost savings, and maximizes your incentive potential.

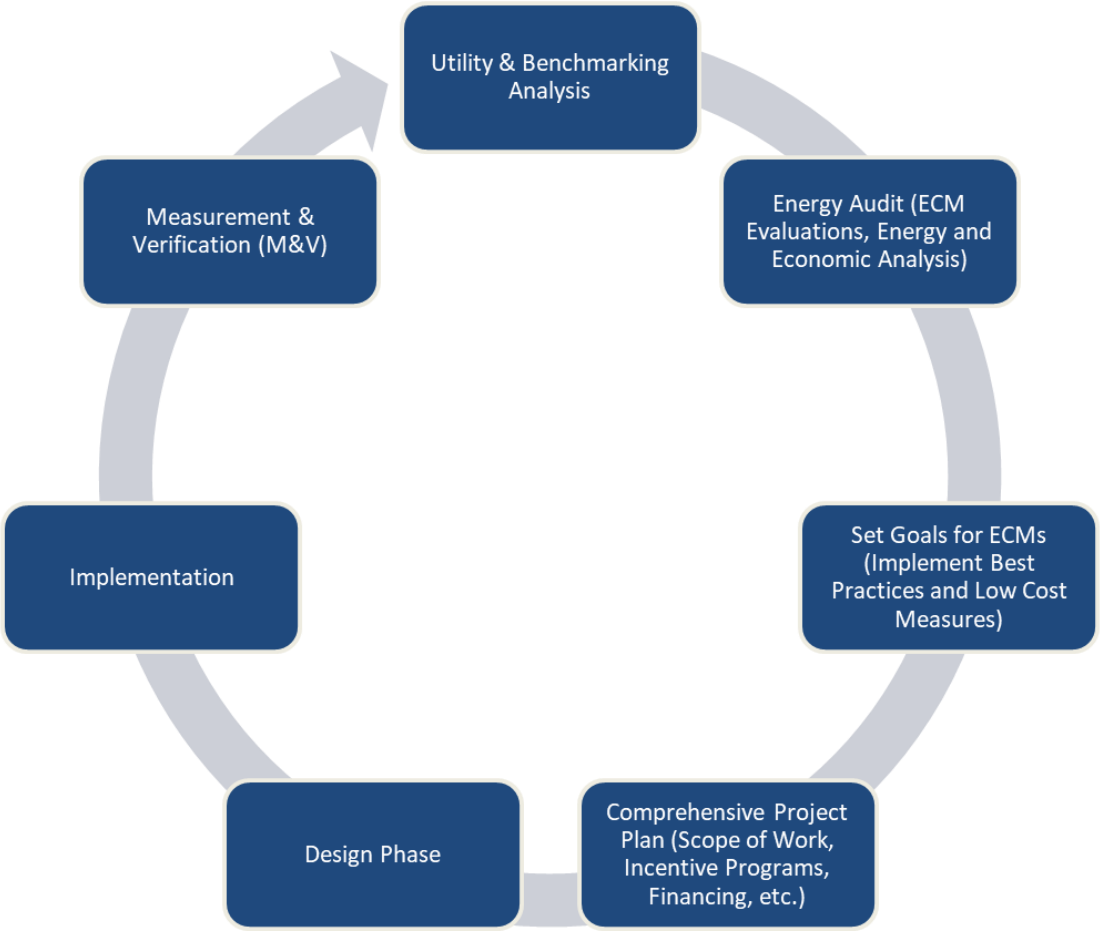


Figure 11 – Project Development Cycle

10 Energy Purchasing and Procurement Strategies

10.1 Retail Electric Supply Options

Energy deregulation in New Jersey has increased energy buyers' options by separating the function of electricity distribution from that of electricity supply. 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 already buys electricity from a third-party supplier, review and compare prices at the end of each contract year.

A list of licensed third-party electric suppliers is available at the NJBPU website[5].

10.2 Retail Natural Gas Supply Options

The natural gas market in New Jersey is also deregulated. Most customers that remain with the utility for natural gas service pay rates that are market based and fluctuate monthly. The utility provides basic gas supply service 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 typically depends on whether a customer prefers 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 does not already purchase natural gas from a third-party supplier, consider shopping for a reduced rate from third-party natural gas suppliers. If your facility already purchases natural gas from a third-party supplier, review and compare prices at the end of each contract year.

A list of licensed third-party natural gas suppliers is available at the NJBPU website[6].

[5] www.state.nj.us/bpu/commercial/shopping.html.

[6] www.state.nj.us/bpu/commercial/shopping.html.

APPENDIX A: EQUIPMENT INVENTORY & RECOMMENDATIONS

Lighting Inventory & Recommendations

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
1014 closet	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
1018 closet	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
1408 storage	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	55	0	$5	$116	$0	21.8
1410 storage	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	55	0	$5	$116	$0	21.8
2124 storage 1	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	55	0	$5	$116	$0	21.8
2315 closet	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
2nd Basement Storage	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$116	$0	16.3
2nd Basement Storage	11	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.1	407	0	$39	$270	$0	6.9
2nd Basement Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	S	32	3,740	3	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	72	0	$7	$18	$5	1.9
2nd BasementStorage	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	111	0	$11	$116	$0	10.9
2nd BasementStorage	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$0	16.3
2nd BasementStorage	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	S	32	3,740	3	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	72	0	$7	$18	$5	1.9
Art Prep Room	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Auditorium	6	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Auditorium	36	LED - Fixtures: Downlight Recessed	Wall Switch	S	13	3,740	4	None	Yes	36	LED - Fixtures: Downlight Recessed	Occupancy Sensor	13	2,581	0.1	597	0	$57	$810	$105	12.3
Auditorium	20	LED - Fixtures: Downlight Surface Mount	Wall Switch	S	23	3,740	4	None	Yes	20	LED - Fixtures: Downlight Surface Mount	Occupancy Sensor	23	2,581	0.1	587	0	$56	$540	$70	8.4
Auditorium	10	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,740	4	None	Yes	10	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	30	2,581	0.1	383	0	$37	$270	$35	6.4
Back Stage	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Back Stage	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Back Stage	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Basement Break Room	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	S	44	3,360		None	No	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	3,360	0.0	0	0	$0	$0	$0	0.0
Basement Conference	6	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	S	26	3,740	4	None	Yes	6	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	195	0	$19	$270	$35	12.6
Basement Electrical Room	9	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	166	0	$16	$270	$35	14.7
Basement Electrical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	S	32	3,740	3	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	72	0	$7	$18	$5	1.9
Basement Foyer	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Basement Foyer	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Basement IT Room	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Basement IT Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	S	32	3,740	3, 4	Relamp	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	271	0	$26	$325	$50	10.6
Basement Main Area	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Basement Main Area	22	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	22	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Basement Office	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	S	58	3,360		None	No	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,360	0.0	0	0	$0	$0	$0	0.0
Basement Office	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	148	0	$14	$270	$35	16.6
Basement Office	4	Compact Fluorescent: (2) 31W Biaxial Plug-In Lamps	Occupancy Sensor	S	62	3,360	3	Relamp	No	4	LED Lamps: GX23 (Plug-In) Lamps	Occupancy Sensor	44	3,360	0.1	266	0	$26	$100	$8	3.6
Basement Office	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	S	58	3,360		None	No	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,360	0.0	0	0	$0	$0	$0	0.0
Basement Office	4	Compact Fluorescent: (2) 31W Biaxial Plug-In Lamps	Occupancy Sensor	S	62	3,360	3	Relamp	No	4	LED Lamps: GX23 (Plug-In) Lamps	Occupancy Sensor	44	3,360	0.1	266	0	$26	$100	$8	3.6
Basement Office	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	S	58	3,360		None	No	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	3,360	0.0	0	0	$0	$0	$0	0.0
Basement Restroom - Female	1	Compact Fluorescent: (2) 31W Biaxial Plug-In Lamps	Occupancy Sensor	S	62	2,581	3	Relamp	No	1	LED Lamps: GX23 (Plug-In) Lamps	Occupancy Sensor	44	2,581	0.0	51	0	$5	$25	$2	4.7
Basement Restroom - Male	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Basement Storage	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$0	$0	0.0
Basement Storage	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Basement Storage	32	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	32	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.1	592	0	$57	$1,620	$0	28.5
Basement Storage	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	55	0	$5	$0	$0	0.0
Basement Storage	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	148	0	$14	$0	$0	0.0
Basement Storage	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	111	0	$11	$0	$0	0.0
Basement Storage	7	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	129	0	$12	$0	$0	0.0
Basement Woodshop	35	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	35	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.2	1,294	0	$124	$0	$0	0.0
Boiler Room	12	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Book storage (2100s)	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	148	0	$14	$0	$0	0.0
Book storage 2	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$0	$0	0.0
Boys Locker Room 1030A	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Boys Locker Room 1030A	52	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	52	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Boys Locker Room 1030A	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Boys Restroom	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8
Boys Restroom	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,900		None	No	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	30	3,900	0.0	0	0	$0	$0	$0	0.0
Boys Restroom	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	154	0	$15	$270	$35	15.9
Boys Restroom	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Boys Restroom	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8
Boys restroom (2100s)	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Boys restroom (2100s)	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	96	0	$9	$270	$35	25.4
Boys restroom (2400s)	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Boys restroom (2400s)	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8
Boys Shower Room	5	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	5	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Boys Shower Room	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Boys Shower Room	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	S	17	3,900		None	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	3,900	0.0	0	0	$0	$0	$0	0.0
Boys Shower Room 2	2	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	2	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Bubble (Outside Gym)	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Bubble (Outside Gym)	35	LED - Fixtures: High-Bay	Occupancy Sensor	S	220	3,360		None	No	35	LED - Fixtures: High-Bay	Occupancy Sensor	220	3,360	0.0	0	0	$0	$0	$0	0.0
Bubble (Weigh Room)	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Bubble (Weigh Room)	10	LED - Fixtures: High-Bay	Occupancy Sensor	S	220	3,360		None	No	10	LED - Fixtures: High-Bay	Occupancy Sensor	220	3,360	0.0	0	0	$0	$0	$0	0.0
Cafeteria	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Cafeteria	56	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	3,360		None	No	56	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1012	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1014	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1018	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1101	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Classroom 1103	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1105	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1107	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1109	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1111	9	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	9	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1200	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1201	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1202	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1203	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1204	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1205	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1206	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1207	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1209	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1210	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1211	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1212	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1213	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1214	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1215	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1301	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Classroom 1301	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1302	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Classroom 1302	13	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	13	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1305	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Classroom 1305	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1403	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1403A	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1404	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1406	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1408	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1410	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1411	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1412	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1413	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1414	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1415	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1416	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1417	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1418	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1419	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1420	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1421	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2207	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 15000	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Classroom 15000	36	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	36	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 1506	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Classroom 1506	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2101	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2103	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Classroom 2107	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2109	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2111	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2112	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2113	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2114	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2115	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2116	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2118	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2119	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2120	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2121	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2122	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2123	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2124 - cooking	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2125	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2126	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2126	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2127	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2128	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2201	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 22013	3	Halogen Incandescent: (1) 150W PAR36 Screw-In Lamp	Wall Switch	S	150	3,740	3, 4	Relamp	Yes	3	LED Lamps: LED Lamaps	Occupancy Sensor	23	2,581	0.3	1,655	0	$159	$322	$38	1.8
Classroom 22013	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2202	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2204	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Classroom 2205	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2206	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2207	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2209	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2210	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2211	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2212	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2216	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2217	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2219	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2302	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2304	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2305	27	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	27	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2306	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2309	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2311	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2315	2	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,740		None	No	2	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Classroom 2315	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	25	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2401	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2403	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2405	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2407	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2409	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2410	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Classroom 2412	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Classroom 2414	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Close	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$116	$0	16.3
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	S	26	3,740		None	No	1	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	26	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,740		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	S	26	3,740		None	No	1	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	26	3,740	0.0	0	0	$0	$0	$0	0.0
Closet (1)	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$0	32.7
Closet 3	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$0	16.3
Closet 4	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Closet Girls Locker Room	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	3,740	3	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	3,740	0.0	66	0	$6	$33	$6	4.2
Coach Restroom	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Coach Shower Room	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Computer Repair Room	3	LED - Linear Tubes: (2) U-Lamp	Wall Switch	S	33	3,740	4	None	Yes	3	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	2,581	0.0	126	0	$12	$270	$35	19.4
Conference Room 1112M	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Conference Room 1112M	5	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	5	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Conference Room Facility	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Conference Room Facility	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	S	58	2,581		None	No	9	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	2,581	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Copy Room 1115	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Copy Room 1115	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Corridor 1000	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 1000	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 11000	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 11000	2	LED - Fixtures: Cove Mount	Occupancy Sensor	S	30	3,360		None	No	2	LED - Fixtures: Cove Mount	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 11000	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 11000	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1200	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 1200	2	LED - Fixtures: Cove Mount	Occupancy Sensor	S	30	3,360		None	No	2	LED - Fixtures: Cove Mount	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1200	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1300	5	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 1300	14	LED - Fixtures: Cove Mount	Occupancy Sensor	S	30	3,360		None	No	14	LED - Fixtures: Cove Mount	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1300	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1400	7	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	7	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 1400	6	LED - Fixtures: Cove Mount	Occupancy Sensor	S	30	3,360		None	No	6	LED - Fixtures: Cove Mount	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1400	32	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	32	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1400	1	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	3,360		None	No	1	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1500	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 1500	4	LED - Fixtures: Cove Mount	Occupancy Sensor	S	30	3,360		None	No	4	LED - Fixtures: Cove Mount	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 1500	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2100s	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 2100s	5	LED - Fixtures: Cove Mount	Occupancy Sensor	S	30	3,360		None	No	5	LED - Fixtures: Cove Mount	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2100s	36	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	36	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2100s	14	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	14	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Corridor 2200s	10	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	10	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 2200s	6	LED Lamps: (1) 15W G25 Screw-In Lamp	Occupancy Sensor	S	15	3,360		None	No	6	LED Lamps: (1) 15W G25 Screw-In Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2200s	26	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	26	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2200s	22	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	22	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2300s	6	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 2300s	14	LED Lamps: (1) 15W G25 Screw-In Lamp	Occupancy Sensor	S	15	3,360		None	No	14	LED Lamps: (1) 15W G25 Screw-In Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2300s	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2400s	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor 2400s	7	LED Lamps: (1) 15W G25 Screw-In Lamp	Occupancy Sensor	S	15	3,360		None	No	7	LED Lamps: (1) 15W G25 Screw-In Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2400s	22	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	22	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor 2400s	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Boys Locker Room	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor Boys Locker Room	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	3,360		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Boys Locker Room	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Glass	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor Glass	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	3,360		None	No	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Glass	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Guidance	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Library	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Corridor Library	31	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	S	30	3,360		None	No	31	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	30	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Library	11	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	3,360		None	No	11	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	3,360	0.0	0	0	$0	$0	$0	0.0
Corridor Library	3	Linear Fluorescent - T12: 3' T12 (30W) - 1L	Wall Switch	S	46	8,760	2	Relamp & Reballast	No	3	LED - Linear Tubes: (1) 3' Lamp	Wall Switch	11	8,760	0.1	1,026	0	$98	$152	$15	1.4
Corridor Library	5	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	S	32	8,760	3	Relamp	No	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	8,760	0.1	843	0	$81	$91	$25	0.8
CST Conference Room	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Custodial	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Custodial	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Custodial	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Custodial	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Custodial	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
Custodial (2300s)	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Custodial 2100s	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Custodial 2100s 3	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Custodian Office	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Custodian Office	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Data 2100s	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Data Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Data Room	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Data Room	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Data room 2400s	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Electrical 2100s	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Electrical 2100s 2	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Electrical Room	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Electrical Room	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Electrical Room	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Electrical Room	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Electrical Room	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	92	0	$9	$270	$35	26.5
Electrical Room	1	LED - Fixtures: Downlight Recessed	Wall Switch	S	11	3,740		None	No	1	LED - Fixtures: Downlight Recessed	Wall Switch	11	3,740	0.0	0	0	$0	$0	$0	0.0
Electrical Room	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Electrical Room	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Electrical Room	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Electrical Room 2400s	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Elevator Room	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Entrance Corridor 1100	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Entrance Corridor 1300	2	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,740		None	No	2	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	30	3,740	0.0	0	0	$0	$0	$0	0.0
Entrance Library	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Entrance Library	8	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	S	30	2,581		None	No	8	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	30	2,581	0.0	0	0	$0	$0	$0	0.0
Entrance Library	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Entrance Upper Gym	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Entrance Upper Gym	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Exterior Recessed	2	LED Lamps: (1) 15W A19 Screw-In Lamp	Photocell		15	4,380		None	No	2	LED Lamps: (1) 15W A19 Screw-In Lamp	Photocell	15	4,380	0.0	0	0	$0	$0	$0	0.0
Exterior Recessed	30	LED - Fixtures: Downlight Recessed	Photocell		13	4,380		None	No	30	LED - Fixtures: Downlight Recessed	Photocell	13	4,380	0.0	0	0	$0	$0	$0	0.0
Exterior Wall Pack	2	LED - Fixtures: Wall Pack	Photocell		85	4,380		None	No	2	LED - Fixtures: Wall Pack	Photocell	85	4,380	0.0	0	0	$0	$0	$0	0.0
Exterior Wall Pack	40	LED - Fixtures: Wall Pack	Photocell		34	4,380		None	No	40	LED - Fixtures: Wall Pack	Photocell	34	4,380	0.0	0	0	$0	$0	$0	0.0
Exterior Wall Pack	2	LED - Fixtures: Wall Pack	Photocell		45	4,380		None	No	2	LED - Fixtures: Wall Pack	Photocell	45	4,380	0.0	0	0	$0	$0	$0	0.0
Facility Reception Area	2	Compact Fluorescent: (2) 40W Biaxial Plug-In Lamps	Occupancy Sensor	S	80	2,581	3	Relamp	No	2	LED Lamps: PL-L (Biax) Lamps	Occupancy Sensor	56	2,581	0.0	136	0	$13	$54	$4	3.8
Facility Reception Area	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Facility Reception Area	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Foyer Gyms	34	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	34	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Foyer Gyms	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Foyer Gyms	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Girls Locker Room	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Girls Locker Room	53	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	53	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Girls Locker Room	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Girls Locker Room	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	4	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Girls Restroom	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Girls Restroom	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Girls Restroom	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8
Girls Restroom	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,900		None	No	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	30	3,900	0.0	0	0	$0	$0	$0	0.0
Girls Restroom	8	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	154	0	$15	$270	$35	15.9
Girls restroom (2100s	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Girls restroom (2100s	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	96	0	$9	$270	$35	25.4
Girls Shower Room	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Girls Shower Room	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Handicap elevator room	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
IT Office	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Kiln Room	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
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	0.0	0	0	$0	$0	$0	0.0
Library	40	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	40	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Library	37	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	S	17	2,581		None	No	37	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	0	0	$0	$0	$0	0.0
Library	9	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	S	33	2,581		None	No	9	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	2,581	0.0	0	0	$0	$0	$0	0.0
Library Office 1117A	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Library Office 1117A	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	S	33	2,581		None	No	1	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	2,581	0.0	0	0	$0	$0	$0	0.0
Locksmith	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Lower Gymnasium	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Lower Gymnasium	20	LED - Fixtures: High-Bay	Occupancy Sensor	S	225	2,581		None	No	20	LED - Fixtures: High-Bay	Occupancy Sensor	225	2,581	0.0	0	0	$0	$0	$0	0.0
Lunch Room Admin	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Lunch Room Admin	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Men Faculty Restroom	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Men Faculty Restroom	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	39	0	$4	$116	$20	26.0
Men Faculty Restroom	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Men Restroom	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	58	0	$6	$116	$20	17.3
Ms Rich Office	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office - Basemen	2	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	S	44	3,740	4	None	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,581	0.0	111	0	$11	$116	$20	9.0
Office - IT	8	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	S	44	3,740	4	None	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,581	0.1	444	0	$43	$270	$35	5.5
Office - Nurse	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office - Nurse	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1012	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1017	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1019	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
Office 1022	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Office 11116B	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112 File Room	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112A	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112C	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112G	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112H	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112I	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112J	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112K	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1112M	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1116C	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1116D	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1116E	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1116F	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1116G	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Office 1116H	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1117D	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1217	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1217A	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1217B	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1405	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1407	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1409	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	S	44	2,581		None	No	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,581	0.0	0	0	$0	$0	$0	0.0
Office 1502	4	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	S	44	3,740	4	None	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,581	0.0	222	0	$21	$270	$35	11.0
Office 2129	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2129A	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2131	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2131	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	1	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2200	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2301	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	111	0	$11	$116	$20	9.0
Office 2301A	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	111	0	$11	$116	$20	9.0
Office 2402	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2402A	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2406	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2406A	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2411	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office 2411A	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Office Coach	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Office Coach	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office Coach	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Office Coach 1028	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	148	0	$14	$270	$35	16.6
Office Coach 1030	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	148	0	$14	$270	$35	16.6
Office Dr Chris Regino	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office Dr Lana Cook	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office Mr Kevin Cullen	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office Mr Nicholas Trezza	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Office V Principal	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Prep Room 2200A	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Prep Room 2203	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Prep Room 2205A	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Prep Room 2208	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Prep Room 2214	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Prep Room 2215	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Prep room 2313	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Prop Storage	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Prop Storage	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,740		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Prop Storage	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
Pump House	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	222	0	$21	$270	$35	11.0
Pump Room	13	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	13	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	240	0	$23	$270	$35	10.2
Ramp 1200/1400	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Ramp 1200/1400	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	11	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Reception Guidance	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Reception Guidance	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Restroom	1	LED - Fixtures: Downlight Recessed	Wall Switch	S	15	3,900		None	No	1	LED - Fixtures: Downlight Recessed	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,900		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,900	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Restroom - (2100s)	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Admin	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Admin	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Boys	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Boys	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8
Restroom - Faculty (2400s)	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Female Coach	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Female Coach	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Female Faculty	2	LED - Fixtures: Downlight Recessed	Occupancy Sensor	S	13	2,581		None	No	2	LED - Fixtures: Downlight Recessed	Occupancy Sensor	13	2,581	0.0	0	0	$0	$0	$0	0.0
Restroom - Female Faculty	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Restroom - Girls	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Girls	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	77	0	$7	$270	$35	31.8
Restroom - Nurse	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	S	15	3,900		None	No	1	LED Lamps: (1) 15W G25 Screw-In Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Nurse	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Nurse	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	2	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Restroom - Unisex	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,900		None	No	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	30	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Unisex	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	58	0	$6	$116	$20	17.3
Restroom - Women Faculty	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,900		None	No	1	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	30	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom - Women Faculty	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	58	0	$6	$116	$20	17.3
Restroom - Women Faculty (	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Restroom Women Faculty	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Room 1113 Adm Reception	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Room 1113 Adm Reception	40	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	40	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Room 1113L Adm Conference	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Room 1114 Nurse	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	14	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Room 1116 CST Reception	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Room 1116 CST Reception	10	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	10	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
School Store	5	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	5	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Security office	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Server Room	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	148	0	$14	$270	$35	16.6
Shower Room	4	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	S	9	3,740		None	No	4	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	9	3,740	0.0	0	0	$0	$0	$0	0.0
Shower Room	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Shower Room	5	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	S	9	3,740		None	No	5	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	9	3,740	0.0	0	0	$0	$0	$0	0.0
Shower Room	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	111	0	$11	$270	$35	22.1
Stage Auditorium	12	LED - Fixtures: Linear Strip	Wall Switch	S	36	3,740	4	None	Yes	12	LED - Fixtures: Linear Strip	Occupancy Sensor	36	2,581	0.1	551	0	$53	$270	$35	4.4
Stage Auditorium	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	S	17	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	2,581	0.0	43	0	$4	$116	$20	23.1
Stairs Basement	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Stairs Exit 12	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Stairs Exit 18	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Stairs Exit 18	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	92	0	$9	$270	$35	26.5
Stairs Exit 19	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Stairs Exit 19	3	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,740	4	None	Yes	3	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	30	2,581	0.0	115	0	$11	$270	$35	21.3
Stairs Exit 19	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.1	296	0	$28	$270	$35	8.3
Stairs Exit 20	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Stairs Exit 20	3	LED Lamps: (2) 15W G25 Screw-In Lamps	Wall Switch	S	30	3,740	4	None	Yes	3	LED Lamps: (2) 15W G25 Screw-In Lamps	Occupancy Sensor	30	2,581	0.0	115	0	$11	$270	$35	21.3
Stairs Exit 20	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.1	296	0	$28	$270	$35	8.3
Stairs Exit 27	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Stairs Exit 28	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Stairs Exit 29	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Stairs Exit 3	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Stairs Exit 33	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Storage 1504	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
Storage Library	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	74	0	$7	$270	$35	33.1
Storage Lower Gym	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
Storage Lower Gym	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	3,740	3, 4	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.1	345	0	$33	$189	$40	4.5
Storage Room	5	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	5	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	92	0	$9	$270	$35	26.5
Storage Upper Gym	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740		None	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,740	0.0	0	0	$0	$0	$0	0.0
Storage Upper Gym	6	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	111	0	$11	$270	$35	22.1
Team Locker Room 1022A	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Team Locker Room 1022A	6	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	S	9	3,740	4	None	Yes	6	LED - Linear Tubes: (1) 2' Lamp	Occupancy Sensor	9	2,581	0.0	65	0	$6	$270	$35	37.7
Team Room 1019A	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Team Room 1019A	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.1	296	0	$28	$270	$35	8.3
Team Room 1019B	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Team Room 1019B	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.1	296	0	$28	$270	$35	8.3
Team Room 1022B	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Team Room 1022B	5	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	5	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	185	0	$18	$270	$35	13.2
Ticket Boot	3	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	S	53	3,740	3, 4	Relamp	Yes	3	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.1	437	0	$42	$416	$62	8.5
Training Room 1020	8	LED - Linear Tubes: (4) 2' Lamps	Occupancy Sensor	S	34	2,581		None	No	8	LED - Linear Tubes: (4) 2' Lamps	Occupancy Sensor	34	2,581	0.0	0	0	$0	$0	$0	0.0
TV Studio	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
TV Studio	14	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	S	26	3,740	4	None	Yes	14	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.1	455	0	$44	$270	$35	5.4
TV Studio	12	Halogen Incandescent: (1) 90W PAR38 Screw-In Lamp	Wall Switch	S	90	3,740	3, 4	Relamp	Yes	12	LED Lamps: PAR38 Lamps	Occupancy Sensor	14	2,581	0.7	3,966	-1	$380	$633	$71	1.5
TV Studio	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	S	26	2,581		None	No	8	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,581	0.0	0	0	$0	$0	$0	0.0
Upper Gym Equipment	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	74	0	$7	$116	$20	13.5
Upper Gym Equipment	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	S	29	3,740	4	None	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	111	0	$11	$270	$35	22.1
Upper 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	0.0	0	0	$0	$0	$0	0.0

	Existing Conditions						Proposed Conditions								Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Upper Gymnasium	36	LED - Fixtures: High-Bay	Occupancy Sensor	S	225	2,581		None	No	36	LED - Fixtures: High-Bay	Occupancy Sensor	225	2,581	0.0	0	0	$0	$0	$0	0.0
Vault	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Women Faculty Restroom	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Women Faculty Restroom	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,900	0.0	0	0	$0	$0	$0	0.0
Women Restroom	3	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,900	4	None	Yes	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,691	0.0	58	0	$6	$116	$20	17.3
Zen	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	24	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Closet	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Kitchen	5	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Kitchen	2	Halogen Incandescent: (1) 250W PAR38 Screw-In Lamp	Wall Switch	S	250	3,740	3, 4	Relamp	Yes	2	LED Lamps: PAR38 Lamps	Occupancy Sensor	38	2,581	0.3	1,841	0	$177	$176	$26	0.9
Kitchen	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	S	29	2,581		None	No	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,581	0.0	0	0	$0	$0	$0	0.0
Kitchen	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	S	44	2,581		None	No	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,581	0.0	0	0	$0	$0	$0	0.0
Kitchen 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	0.0	0	0	$0	$0	$0	0.0
Kitchen Entrance	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740		None	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,740	0.0	0	0	$0	$0	$0	0.0
Kitchen Restroom	2	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	37	0	$4	$116	$20	27.1
Office Kitchen	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	S	15	2,581		None	No	2	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	0	0	$0	$0	$0	0.0
Storage Kitchen	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	$0	$0	$0	0.0
Storage Kitchen	9	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	S	15	3,740	4	None	Yes	9	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,581	0.0	166	0	$16	$270	$35	14.7
Football Field Pole Lights	43	Metal Halide: (1) 1500W Lamp	Breaker Panel		1,610	123		None	No	43	Metal Halide: (1) 1500W Lamp	Breaker Panel	1,610	123	0.0	0	0	$0	$0	$0	0.0
Parking Lot	27	High-Pressure Sodium: (1) 150W Lamp	Photocell		188	4,380	1	Fixture Replacement	No	27	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Photocell	56	4,380	0.0	15,563	0	$1,546	$10,111	$2,700	4.8

Motor Inventory & Recommendations

		Existing Conditions									Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Manufacturer	Model	Remaining Useful Life	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	Hot Water Pumps P5P6	2	Heating Hot Water Pump	10.0	91.7%	Yes	Weg	01018OT3E215T-S	W	3,391		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Boiler Room	Condenser Water P7P8	2	Condenser Water Pump	40.0	94.1%	Yes	Weg	04012OT3E364T	W	3,800		No	94.1%	No		0.0	0	0	$0	$0	$0	0.0
Pump Room	DHW Circulating Pumps	2	DHW Circulation Pump	1.5	84.0%	No			W	8,760		No	84.0%	No		0.0	0	0	$0	$0	$0	0.0
Pump Room	Sump Pump	1	Other	0.5	70.0%	No			W	1,000		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0
Pump Room	WSHP P3P4	2	Water-Source Heat Pump Circulation Pump	100.0	95.4%	Yes	Weg	10018OT3E405TS	W	3,800		No	95.4%	No		0.0	0	0	$0	$0	$0	0.0
Pump Room	WSHP P1P2	2	Water-Source Heat Pump Circulation Pump	100.0	95.4%	Yes	Weg	10018OT3E405TS	W	5,329		No	95.4%	No		0.0	0	0	$0	$0	$0	0.0
Pump Room	Water Filtration Pump	1	Other	10.0	89.5%	No			W	3,050		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	Cooling Tower Fan	1	Cooling Tower Fan	50.0	94.5%	Yes			W	3,000		No	94.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-20 - 2nd Floor Offices	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-20 - 2nd Floor Offices	1	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-20 - 2nd Floor Offices	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-20 - 2nd Floor Offices	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-18 - 1st Floor Offices	1	Supply Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-18 - 1st Floor Offices	1	Return Fan	2.0	86.5%	Yes	Weg	00218OT3E145T-S	W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-18 - 1st Floor Offices	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-18 - 1st Floor Offices	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-8 - Classrooms	1	Supply Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-8 - Classrooms	1	Return Fan	2.0	86.5%	Yes	Weg	00218OT3E145T-S	W	2,745		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-8 - Classrooms	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-14 - Upper Gymnasium	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0

		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?	Manufacturer	Model	Remaining Useful Life	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Roof	RTU-14 - Upper Gymnasium	1	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-14 - Upper Gymnasium	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-14 - Upper Gymnasium	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-12 - Upper Gymnasium	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-12 - Upper Gymnasium	1	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-12 - Upper Gymnasium	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-12 - Upper Gymnasium	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-10 - Upper Gymnasium	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-10 - Upper Gymnasium	1	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-10 - Upper Gymnasium	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-10 - Upper Gymnasium	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-16 - Girls Locker Room	1	Supply Fan	3.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-16 - Girls Locker Room	1	Return Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-30 - Science Rooms	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-30 - Science Rooms	1	Return Fan	3.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-30 - Science Rooms	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-30 - Science Rooms	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-2 - Aux Gym	1	Supply Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-2 - Aux Gym	1	Return Fan	1.0	85.5%	Yes	Weg	00118OT3E143T-S	W	3,750		No	85.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-6 - Boys Locker Room	1	Supply Fan	3.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0

		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?	Manufacturer	Model	Remaining Useful Life	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Roof	RTU-6 - Boys Locker Room	1	Return Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-4 - Lower Gym	2	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-4 - Lower Gym	2	Return Fan	3.0	90.2%	Yes			W	3,750		No	90.2%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-4 - Lower Gym	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-4 - Lower Gym	2	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-24 - Library	1	Supply Fan	15.0	92.4%	Yes			W	3,750		No	92.4%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-24 - Library	2	Return Fan	3.0	90.2%	Yes			W	3,750		No	90.2%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-24 - Library	2	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-24 - Library	2	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-26 - Auditorium	2	Supply Fan	10.0	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-26 - Auditorium	2	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-26 - Auditorium	2	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-26 - Auditorium	2	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-28 - Auditorium Stage	1	Supply Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-28 - Auditorium Stage	1	Return Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-32 - Science Room	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-32 - Science Room	1	Return Fan	3.0	90.2%	Yes			W	3,750		No	90.2%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-32 - Science Room	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-32 - Science Room	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-34 - Basement	1	Supply Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0

		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?	Manufacturer	Model	Remaining Useful Life	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Roof	RTU-34 - Basement	1	Return Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-34 - Basement	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-36 - Science Rooms	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-36 - Science Rooms	1	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-36 - Science Rooms	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-36 - Science Rooms	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-38 - TV Studio	1	Supply Fan	7.5	91.7%	Yes				3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-38 - TV Studio	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-38 - TV Studio	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-42 - Faculty Room	1	Supply Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-42 - Faculty Room	1	Return Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-42 - Faculty Room	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-40 - Cafeteria	1	Supply Fan	20.0	93.0%	Yes			W	3,750		No	93.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-40 - Cafeteria	2	Return Fan	5.0	89.5%	Yes	Weg	00518OT3E184T-S	W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-40 - Cafeteria	1	Other	0.3	65.0%	No	AAON	248-582/1	W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-40 - Cafeteria	2	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-44 - Classrooms	1	Supply Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-46 - CPU Classrooms	1	Supply Fan	2.0	86.5%	Yes			W	3,750		No	86.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-48 - Classrooms	1	Supply Fan	10.0	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-48 - Classrooms	1	Return Fan	7.5	91.0%	Yes			W	3,750		No	91.0%	No		0.0	0	0	$0	$0	$0	0.0

		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?	Manufacturer	Model	Remaining Useful Life	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Roof	RTU-48 - Classrooms	2	Other	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-48 - Classrooms	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-50 - Auditorium Rooms	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-50 - Auditorium Rooms	1	Return Fan	5.0	89.5%	Yes			W	3,750		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-50 - Auditorium Rooms	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-50 - Auditorium Rooms	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-52 - Music Rooms	1	Supply Fan	7.5	91.7%	Yes			W	3,750		No	91.7%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-52 - Music Rooms	1	Return Fan	3.0	90.2%	Yes			W	3,750		No	90.2%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-52 - Music Rooms	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	RTU-52 - Music Rooms	1	Other	0.1	65.0%	No			W	3,000		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Ground Floor	Dumpster	1	Other	5.0	89.5%	No			W	1,000		No	89.5%	No		0.0	0	0	$0	$0	$0	0.0
Elevator Room	Hydraulic Elevator	1	Other	25.0	80.0%	No			W	500		No	80.0%	No		0.0	0	0	$0	$0	$0	0.0
2nd Basement Storage	Sump Pump	1	Other	0.5	70.0%	No			W	1,000		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0
Basement Main Area	Sump Pump	1	Other	0.5	70.0%	No			W	1,000		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0
Basement Main Area	Sump Pump	2	Other	0.5	70.0%	No			W	1,000		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	EF-54 - Kitchen	1	Kitchen Hood Exhaust Fan	3.0	84.0%	No			W	5,250		No	84.0%	No		0.0	0	0	$0	$0	$0	0.0
Basement Woodshop	Portable Air Compressor	1	Air Compressor	1.0	82.0%	No			W	600		No	82.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	Science Classrooms	5	Exhaust Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	CHP-1 - Various Spaces	15	Supply Fan	0.1	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	CHP-2 & 3 - Various Spaces	23	Supply Fan	0.1	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0

		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?	Manufacturer	Model	Remaining Useful Life	Annual Operating Hours	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Various Spaces	CHP-4 & 5 - Various Spaces	33	Supply Fan	0.2	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	HP-1 - Various Spaces	21	Supply Fan	0.1	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	HP-1 & 2 - Various Spaces	19	Supply Fan	0.1	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	HP-3 & 4 - Various Spaces	42	Supply Fan	0.8	70.0%	No			W	3,750		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	HP-5, 6 & 7 - Various Spaces	14	Supply Fan	1.0	84.0%	No			W	3,750		No	84.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	UV-2 - Classrooms	14	Supply Fan	0.3	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Various Spaces	UV-3 & 3 - Classrooms	98	Supply Fan	0.1	65.0%	No			W	3,750		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Ground Floor	RTU-N-1 - Outside Bubble	1	Supply Fan	15.0	92.4%	Yes			W	3,750		No	92.4%	No		0.0	0	0	$0	$0	$0	0.0
Ground Floor	RTU-N-1 - Outside Bubble	2	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Ground Floor	RTU-N-2 - Outside Bubble	1	Supply Fan	15.0	92.4%	Yes			W	3,750		No	92.4%	No		0.0	0	0	$0	$0	$0	0.0
Ground Floor	RTU-N-2 - Outside Bubble	1	Combustion Air Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Basement IT Room	Basement IT Room	1	Supply Fan	2.0	84.0%	No			W	3,750		No	84.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	Various Spaces	4	Exhaust Fan	0.2	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	Various Spaces	7	Exhaust Fan	0.3	65.0%	No			W	2,745		No	65.0%	No		0.0	0	0	$0	$0	$0	0.0
Roof	Various Spaces	2	Exhaust Fan	0.5	70.0%	No			W	2,745		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0
Electrical Room	Electrical Room	1	Exhaust Fan	0.5	70.0%	No			W	2,745		No	70.0%	No		0.0	0	0	$0	$0	$0	0.0

Packaged HVAC Inventory & Recommendations

		Existing Conditions									Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (MBh)	Cooling Mode Efficiency (SEER/IEER/ EER)	Heating Mode Efficiency	Manufacturer	Model	Remaining Useful Life	ECM #	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (MBh)	Cooling Mode Efficiency (SEER/IEER/ EER)	Heating Mode Efficiency	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Cafeteria	Cafeteria	4	Electric Resistance Heat		25.59		1 COP			W		No							0.0	0	0	$0	$0	$0	0.0
Roof	Elevator Room	1	Split-System Air-Source HP	1.50	22.00	12.60	4.1 COP	LG	LSU180HSV4	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-20 - 2nd Floor Offices	1	Package Unit	16.00	218.70	13.70	0.81 AFUE	AAON	RN-016-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-18 - 1st Floor Offices	1	Package Unit	16.00	218.70	13.70	0.81 AFUE	AAON	RN-016-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-8 - Classrooms	1	Package Unit	13.00	234.00	13.70	0.8 AFUE	AAON	RN-013-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-14 - Upper Gymnasium	1	Package Unit	20.00	218.70	13.70	0.81 AFUE	AAON	RN-020-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-12 - Upper Gymnasium	1	Package Unit	20.00	218.70	13.70	0.81 AFUE	AAON	RN-020-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-10 - Upper Gymnasium	1	Package Unit	20.00	218.70	13.70	0.81 AFUE	AAON	RN-020-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-16 - Girls Locker Room	1	Package Unit	8.00	120.00	13.70	0.8 AFUE	AAON	RN-008-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-30 - Science Rooms	1	Package Unit	18.00	218.70	13.70	0.81 AFUE	AAON	RN-018-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-2 - Aux Gym	1	Package Unit	6.00	72.90	13.70	0.81 AFUE	AAON	RN-006-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-6 - Boys Locker Room	1	Package Unit	7.00	72.90	13.70	0.81 AFUE	AAON	RN-007-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-4 - Lower Gym	1	Package Unit	50.00	648.00	11.90	0.8 AFUE	AAON	RN-050-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-24 - Library	1	Package Unit	40.00	432.00	11.90	0.8 AFUE	AAON	RN-040-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-26 - Auditorium	1	Package Unit	40.00	432.00	11.90	0.8 AFUE	AAON	RN-040-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-28 - Auditorium Stage	1	Package Unit	8.00	72.90	13.70	0.81 AFUE	AAON	RN-008-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-32 - Science Room	1	Package Unit	18.00	218.70	13.70	0.81 AFUE	AAON	RN-018-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-34 - Basement	1	Package Unit	7.00	72.90	13.70	0.81 AFUE	AAON	RN-007-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-36 - Science Rooms	1	Package Unit	16.00	218.70	13.70	0.81 AFUE	AAON	RN-016-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-38 - TV Studio	1	Package Unit	18.00	218.70	13.70	0.81 AFUE	AAON	RN-018-3-A	W		No							0.0	0	0	$0	$0	$0	0.0

		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 (MBh)	Cooling Mode Efficiency (SEER/IEER/ EER)	Heating Mode Efficiency	Manufacturer	Model	Remaining Useful Life	ECM #	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	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Roof	RTU-42 - Faculty Room	1	Package Unit	7.00	120.00	13.70	0.8 AFUE	AAON	RN-007-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-40 - Cafeteria	1	Package Unit	50.00	648.00	11.90	0.8 AFUE	AAON	RN-050-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-44 - Classrooms	1	Package Unit	8.00	72.90	13.70	0.81 AFUE	AAON	RN-008-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-46 - CPU Classrooms	1	Package Unit	8.00	72.90	13.70	0.81 AFUE	AAON	RN-008-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-48 - Classrooms	1	Package Unit	25.00	432.00	13.70	0.8 AFUE	AAON	RN-025-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-50 - Auditorium Rooms	1	Package Unit	16.00	218.70	13.70	0.81 AFUE	AAON	RN-016-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Roof	RTU-52 - Music Rooms	1	Package Unit	18.00	218.70	13.70	0.81 AFUE	AAON	RN-018-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Ground Floor	RTU-N-1 - Outside Bubble	1	Package Unit	30.00	432.00	13.70	0.8 AFUE	AAON	RN-030-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Ground Floor	RTU-N-2 - Outside Bubble	1	Package Unit	30.00	432.00	13.70	0.8 AFUE	AAON	RN-030-3-A	W		No							0.0	0	0	$0	$0	$0	0.0
Various Spaces	CHP-1 - Various Spaces	15	Water Source HP	0.50	9.40	12.25	4.35 COP	Trane	GECA00671D0120	B	6	Yes	15	Water Source HP	0.50	9.40	14.00	4.8 COP	1.5	1,606	0	$160	$40,526	$338	251.8
Various Spaces	CHP-2 - Various Spaces	11	Water Source HP	0.75	10.90	12.85	4.55 COP	Trane	GECA00971D0120	B	6	Yes	11	Water Source HP	0.75	10.90	14.00	4.8 COP	0.3	916	0	$91	$33,158	$371	360.1
Various Spaces	CHP-3 - Various Spaces	12	Water Source HP	1.00	14.60	13.25	4.35 COP	Trane	GECA01271D0120	B	6	Yes	12	Water Source HP	1.00	14.60	14.00	4.8 COP	0.8	1,507	0	$150	$39,924	$540	263.1
Various Spaces	CHP-4 - Various Spaces	7	Water Source HP	1.25	17.90	13.45	4.25 COP	Trane	GECA01571D0120	B	6	Yes	7	Water Source HP	1.25	17.90	14.00	4.8 COP	0.6	1,160	0	$115	$25,477	$394	217.5
Various Spaces	CHP-5 - Various Spaces	26	Water Source HP	1.50	20.80	13.15	4.25 COP	Trane	GECA01871D0120	B	6	Yes	26	Water Source HP	1.50	20.80	15.00	4.5 COP	3.0	5,707	0	$567	$102,756	$2,652	176.5
Various Spaces	HP-1 - Various Spaces	21	Water Source HP	1.00	14.60	12.95	4.14 COP	Trane	GEHB01271G0120	B	6	Yes	21	Water Source HP	1.00	14.60	14.00	4.8 COP	1.9	3,966	0	$394	$69,866	$945	174.9
Various Spaces	HP-2 - Various Spaces	9	Water Source HP	1.25	18.30	12.60	3.75 COP	Trane	GEHB01571G0120	B	6	Yes	9	Water Source HP	1.25	18.30	14.00	4.8 COP	1.6	3,475	0	$345	$32,756	$506	93.4
Various Spaces	HP-3 - Various Spaces	10	Water Source HP	1.50	21.90	12.75	3.92 COP	Trane	GEHB01871G0120	B	6	Yes	10	Water Source HP	1.50	21.90	15.00	4.5 COP	2.2	3,754	0	$373	$39,522	$1,020	103.2
Various Spaces	HP-4 - Various Spaces	28	Water Source HP	2.50	35.70	12.79	3.91 COP	Trane	GEHB03041G0120	B	6	Yes	28	Water Source HP	2.50	35.70	15.00	4.5 COP	9.5	17,318	0	$1,721	$183,959	$4,760	104.1
Various Spaces	HP-5 - Various Spaces	14	Water Source HP	3.00	41.20	13.45	4.15 COP	Trane	GEHB03641G0120	B	6	Yes	14	Water Source HP	3.00	41.20	15.00	4.5 COP	3.6	6,243	0	$620	$103,069	$2,856	161.5
Various Spaces	HP-6 - Various Spaces	7	Water Source HP	4.00	58.20	12.88	4.1 COP	Trane	GEHB04841G0120	B	6	Yes	7	Water Source HP	4.00	58.20	15.00	4.5 COP	3.4	5,558	0	$552	$60,287	$1,904	105.7

		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 (MBh)	Cooling Mode Efficiency (SEER/IEER/ EER)	Heating Mode Efficiency	Manufacturer	Model	Remaining Useful Life	ECM #	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	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Various Spaces	HP-7 - Various Spaces	5	Water Source HP	5.00	70.50	12.75	3.81 COP	Trane	GEHB06041G0120	B	6	Yes	5	Water Source HP	5.00	70.50	15.00	4.5 COP	3.6	6,834	0	$679	$49,314	$1,700	70.1
Various Spaces	HP-8 - Various Spaces	2	Water Source HP	5.00	75.40	14.25	4.05 COP	Trane	GEVB06041F0120	B	6	Yes	2	Water Source HP	5.00	75.40	15.00	4.5 COP	1.5	1,352	0	$134	$19,726	$680	141.8
Various Spaces	UV-2 - Classrooms	14	Water Source HP	3.00	52.95	11.25	3.45 COP	Trane	WPCD0364	B	6	Yes	14	Water Source HP	3.00	52.95	15.00	4.5 COP	14.7	23,039	0	$2,289	$103,069	$2,856	43.8
Various Spaces	UV-3 - Classrooms	20	Water Source HP	3.33	61.18	9.85	3.46 COP	Trane	WPCD0404	B	6	Yes	20	Water Source HP	3.33	61.18	15.00	4.5 COP	25.2	45,982	0	$4,569	$155,578	$4,533	33.1
Various Spaces	UV-4 - Classrooms	29	Water Source HP	3.75	71.77	9.65	3.25 COP	Trane	WPCD0454	B	6	Yes	29	Water Source HP	3.75	71.77	15.00	4.5 COP	50.3	89,179	0	$8,862	$240,696	$7,395	26.3
Ground Floor	IT Room	1	Split-System	6.92		12.00		Liebert	DCSF083-Z	B	5	Yes	1	Split-System	6.92		14.00		0.5	865	0	$86	$11,978	$546	133.1
Ground Floor	IT Room	1	Ductless Mini-Split AC	2.00		10.60		Daikin	RKN24KEVJU	B	5	Yes	1	Ductless Mini-Split AC	2.00		18.00		0.5	814	0	$81	$3,922	$0	48.5
Pump House	Pump House	1	Electric Resistance Heat		25.59		1 COP			W		No							0.0	0	0	$0	$0	$0	0.0
Custodian Office	Custodian Office - Portable AC	1	Window AC	0.50		10.10				W		No							0.0	0	0	$0	$0	$0	0.0
Room 1114 Nurse	Room 1114 Nurse - Portable AC	1	Window AC	0.50		10.10				W		No							0.0	0	0	$0	$0	$0	0.0
Server Room	Server Room	1	Window AC	2.08		10.30				W		No							0.0	0	0	$0	$0	$0	0.0

Space Heating Boiler Inventory & Recommendations

		Existing Conditions						Proposed Conditions							Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Output Capacity per Unit (MBh)	Manufacturer	Model	Remaining Useful Life	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	Heating Hot Water System	3	Condensing Hot Water Boiler	2,790	AERCO	BMK 3000	W		No						0.0	0	0	$0	$0	$0	0.0

Demand Control Ventilation Recommendations

DHW Inventory & Recommendations

		Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Manufacturer	Model	Remaining Useful Life	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Pump Room	Domestic Hot Water System	2	Boiler	Weben -Jarco	AJH-120 NG	B	8	Yes	2	Condensing Boiler	Natural Gas	91.00%	Et	0.0	0	106	$1,744	$171,210	$0	98.2

Low-Flow Device Recommendations

	Recommedation Inputs					Energy Impact & Financial Analysis						
Location	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Restrooms	9	7	Faucet Aerator (Lavatory)	2.00	0.50	0.0	0	6	$97	$50	$25	0.3

Walk-In Cooler/Freezer Inventory & Recommendations

	Existing Conditions				Proposed Conditions				Energy Impact & Financial Analysis						
Location	Cooler/ Freezer Quantity	Case Type/Temperature	Manufacturer	Model	ECM #	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	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Medium Temp Freezer (0F to 30F)	Trenton	TLP209LE-52A	10, 11	Yes	Yes	Yes	0.1	1,936	0	$192	$2,799	$205	13.5
Kitchen	1	Cooler (35F to 55F)	Bohn		10, 11	Yes	No	Yes	0.0	528	0	$52	$1,977	$115	35.5
Kitchen	1	Low Temp Freezer (-35F to -5F)	Bohn		10, 11	Yes	Yes	Yes	0.1	2,040	0	$203	$2,799	$205	12.8

Commercial Refrigerator/Freezer Inventory & Recommendations

	Existing Conditions					Proposed Conditions		Energy Impact & Financial Analysis						
Location	Quantity	Refrigerator/ Freezer Type	Manufacturer	Model	ENERGY STAR Qualified?	ECM #	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Stand-Up Refrigerator, Solid Door (16 - 30 cu. ft.)	Traulsen	G10003P	No		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	2	Stand-Up Refrigerator, Glass Door (16 - 30 cu. ft.)	QBD Cooling Systems	CD26HC	No		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Stand-Up Refrigerator, Glass Door (16 - 30 cu. ft.)	Aquafina		No		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Stand-Up Freezer, Solid Door (31 - 50 cu. ft.)	Supera	F2R-1	Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	TRUE	T-49	Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Stand-Up Freezer, Solid Door (31 - 50 cu. ft.)	Master-Bilt	F49-S	Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Refrigerator Chest			No		No	0.0	0	0	$0	$0	$0	0.0

Commercial Ice Maker Inventory & Recommendations

	Existing Conditions					Proposed Conditions		Energy Impact & Financial Analysis						
Location	Quantity	Ice Maker Type	Manufacturer	Model	ENERGY STAR Qualified?	ECM #	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Self-Contained Unit (≥175 lbs/day), Continuous	Hoshizaki	KML-325MAJ	Yes		No	0.0	0	0	$0	$0	$0	0.0
Training Room 1020	1	Self-Contained Unit (≥175 lbs/day), Continuous	KoolAire		Yes		No	0.0	0	0	$0	$0	$0	0.0
Basement Main Area	1	Self-Contained Unit (≥175 lbs/day), Continuous	Manitowoc		No		No	0.0	0	0	$0	$0	$0	0.0

Cooking Equipment Inventory & Recommendations

	Existing Conditions					Proposed Conditions		Energy Impact & Financial Analysis						
Location	Quantity	Equipment Type	Manufacturer	Model	High Efficiency Equipement?	ECM #	Install High Efficiency Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Insulated Food Holding Cabinet (Full Size)	Metro	C539-HDS-U	Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	4	Gas Convection Oven (Full Size)	Blodgett		Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Gas Combination Oven/Steam Cooker (15 - 28 Pans)	Rational		Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Gas Griddle (3 Feet Width)	Southbend	HDC-48	Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Gas Combination Oven/Steam Cooker (<15 Pans)	Wolf Regency		Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	2	Insulated Food Holding Cabinet (Full Size)	CresCor		Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Commercial Rotisserie	Alto Shaam	AR-7EVH	Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	1	Kitchen Equipment			Yes		No	0.0	0	0	$0	$0	$0	0.0
Kitchen	2	Commercial Coffee Brewer	Fetco	CBS-2052e	Yes		No	0.0	0	0	$0	$0	$0	0.0
Cafeteria	1	Electric Kitchen Equipment			Yes		No	0.0	0	0	$0	$0	$0	0.0

Dishwasher Inventory & Recommendations

	Existing Conditions							Proposed Conditions		Energy Impact & Financial Analysis						
Location	Quantity	Dishwasher Type	Manufacturer	Model	Water Heater Fuel Type	Booster Heater Fuel Type	ENERGY STAR Qualified?	ECM #	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Payback w/ Incentives in Years
Kitchen	1	Door Type (High Temp)	Hobart	AM16VLT-BASX	Electric	N/A	Yes		No	0.0	0	0	$0	$0	$0	0.0

Plug Load Inventory

	Existing Conditions					
Location	Quantity	Equipment Description	Energy Rate (W)	ENERGY STAR Qualified?	Manufacturer	Model
Classroom 2124 - Cooking	2	Clothes Dryer	1,500	No		
Classroom 1403A	2	Clothes Washer	1,300	No		
Various Spaces	23	Coffee Machine	600	No		
2nd Basement Storage	1	Dehumidifier	440	No		
Various Spaces	435	Desktop	270	No		
Kiln Room	1	Kiln	9,984	No		
Various Spaces	32	Microwave	1,000	No		
Various Spaces	21	Misc Plug Load	500	No		
Various Spaces	4	Paper Shredder	224	No		
Various Spaces	123	Printer (Medium/Small)	125	No		
Various Spaces	17	Printer/Copier (Large)	600	No		
Various Spaces	65	Projector	224	No		
Various Spaces	25	Refrigerator (Mini)	200	No		
Various Spaces	21	Refrigerator (Residential)	450	No		
Various Spaces	59	Smart Board	124	No		
Various Spaces	14	Television	125	No		
Various Spaces	9	Toaster	800	No		
Various Spaces	1	Water Cooler	192	No		
IT Room	1	Main Server	4,000	No		

Vending Machine Inventory & Recommendations

	Existing Conditions		Proposed Conditions		Energy Impact & Financial Analysis						
Location	Quantity	Vending Machine Type	ECM #	Install Controls?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Total Incentives	Simple Payback w/ Incentives in Years
Cafeteria	2	Glass Fronted Refrigerated	N/A	No	0.0	0	0	$0	$0	$0	0.0
Cafeteria	1	Non-Refrigerated	N/A	No	0.0	0	0	$0	$0	$0	0.0

Custom (High Level) Measure Analysis

Retro-Commissioning Study										Building Square Footage	296,800				Fuel Utility Rate	$16.490	MMBtu							
										Percent of Conditioned Area Impacted	100%				Blended Electric Utility Rate	$0.099	kWh							
Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis												
Description	Area(s)/System(s) Served	Remaining Useful Life	Total HVAC Motor Usage kWh	Total HVAC Electric Usage kWh	Total HVAC Fuel Usage MMBtu	Description	% Savings HVAC Motor Usage kWh	% Savings HVAC Electric Usage kWh	% Savings HVAC Fuel Usage MMBtu	Estimated Cost per Sqft		Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Estimated M&L Cost ($)	Base Incentives	Enhanced Incentives	Total Incentives	Total Net Cost	Payback w/o Incentives in Years	Simple Payback w/ Incentives in Years		
HVAC Controls Not Currently Optimized	HVAC Equipment & Systems	3	1,986,636	1,543,461	6,647	Retro-Commissioning Study	5%	5%	5%	$0.40		0.00	176,505	332	$23,020	$118,720	$0	$0	$0	$118,720	5.16	5.16		

APPENDIX B: ENERGY STAR STATEMENT OF ENERGY PERFORMANCE

Energy use intensity (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.

LEARN MORE AT energystar.gov

ENERGY STAR® Statement of Energy Performance

34

ENERGY STAR® Score[1]

Middletown High School North - Main Building & Bubble (Campus)

Primary Property Type: K-12 School
Gross Floor Area (ft²): 296,800
Built: 1952

For Year Ending: July 31, 2022
Date Generated: July 24, 2023

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

Property & Contact Information

Property Address	Property Owner	Primary Contact
Middletown High School North - Main Building & Bubble (Campus) 63 Tindall Road Middletown, New Jersey 07748	Middletown Township Public Schools 63 Tindall Road Middletown, NJ 07748 (732) 706-6061	Adam Nasr 63 Tindall Road Middletown, NJ 07748 (732) 706-6061 X 1362 nasra@middletownk12.org

Property ID: 28017569

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
76 kBtu/ft²

Source EUI
153.2 kBtu/ft²

Annual Energy by Fuel	
Electric - Solar (kBtu)	2,213,863 (10%)
Electric - Grid (kBtu)	12,514,503 (56%)
Natural Gas (kBtu)	7,825,541 (35%)

National Median Comparison	
National Median Site EUI (kBtu/ft²)	65
National Median Source EUI (kBtu/ft²)	131
% Diff from National Median Source EUI	17%
Annual Emissions	
Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	1,506

Signature & Stamp of Verifying Professional

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

LP Signature: _____ Date: _____

Licensed Professional

____ _____
,
(___)___-_____
_____

Professional Engineer or Registered Architect Stamp (if applicable)

APPENDIX C: GLOSSARY

TERM	DEFINITION
Blended Rate	Used to calculate fiscal savings associated with measures. The blended rate is calculated by dividing the amount of your bill by the total energy use. For example, if your bill is $22,217.22, and you used 266,400 kilowatt-hours, your blended rate is 8.3 cents per kilowatt-hour.
Btu	*British thermal unit*: a unit of energy equal to the amount of heat required to increase the temperature of one pound of water by one-degree Fahrenheit.
CHP	*Combined heat and power*. Also referred to as cogeneration.
COP	*Coefficient of performance*: a measure of efficiency in terms of useful energy delivered divided by total energy input.
Demand Response	Demand response reduces or shifts electricity usage at or among participating buildings/sites during peak energy use periods in response to time-based rates or other forms of financial incentives.
DCV	*Demand control ventilation*: a control strategy to limit the amount of outside air introduced to the conditioned space based on actual occupancy need.
US DOE	*United States Department of Energy*
EC Motor	*Electronically commutated motor*
ECM	*Energy conservation measure*
EER	*Energy efficiency ratio*: a measure of efficiency in terms of cooling energy provided divided by electric input.
EUI	*Energy Use Intensity:* measures energy consumption per square foot and is a standard metric for comparing buildings' energy performance.
Energy Efficiency	Reducing the amount of energy necessary to provide comfort and service to a building/area. Achieved through the installation of new equipment and/or optimizing the operation of energy use systems. Unlike conservation, which involves some reduction of service, energy efficiency provides energy reductions without sacrifice of service.
ENERGY STAR	ENERGY STAR is the government-backed symbol for energy efficiency. The ENERGY STAR program is managed by the EPA.
EPA	*United States Environmental Protection Agency*
Generation	The process of generating electric power from sources of primary energy (e.g., natural gas, the sun, oil).
GHG	*Greenhouse gas* gases that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.
gpf	*Gallons per flush*

gpm	*Gallon per minute*
HID	*High intensity discharge:* high-output lighting lamps such as high-pressure sodium, metal halide, and mercury vapor.
hp	*Horsepower*
HPS	*High-pressure sodium*: a type of HID lamp.
HSPF	*Heating seasonal performance factor:* a measure of efficiency typically applied to heat pumps. Heating energy provided divided by seasonal energy input.
HVAC	*Heating, ventilating, and air conditioning*
IHP 2014	US DOE Integral Horsepower rule. The current ruling regarding required electric motor efficiency.
IPLV	*Integrated part load value:* a measure of the part load efficiency usually applied to chillers.
kBtu	One thousand British thermal units
kW	*Kilowatt*: equal to 1,000 Watts.
kWh	*Kilowatt-hour*: 1,000 Watts of power expended over one hour.
LED	*Light emitting diode*: a high-efficiency source of light with a long lamp life.
LGEA	*Local Government Energy Audit*
Load	The total power a building or system is using at any given time.
Measure	A single activity, or installation of a single type of equipment, that is implemented in a building system to reduce total energy consumption.
MH	*Metal halide*: a type of HID lamp.
MBh	*Thousand Btu per hour*
MBtu	*One thousand British thermal units*
MMBtu	*One million British thermal units*
MV	*Mercury Vapor:* a type of HID lamp.
NJBPU	*New Jersey Board of Public Utilities*
NJCEP	*New Jersey's Clean Energy Program:* NJCEP is a statewide program that offers financial incentives, programs and services for New Jersey residents, business owners and local governments to help them save energy, money, and the environment.
psig	Pounds per square inch gauge
Plug Load	Refers to the amount of power used in a space by products that are powered by means of an ordinary AC plug.
PV	*Photovoltaic:* refers to an electronic device capable of converting incident light directly into electricity (direct current).

SEER	*Seasonal energy efficiency ratio:* a measure of efficiency in terms of annual cooling energy provided divided by total electric input.
SEP	*Statement of energy performance:* a summary document from the ENERGY STAR Portfolio Manager.
Simple Payback	The amount of time needed to recoup the funds expended in an investment or to reach the break-even point between investment and savings.
SREC (II)	*Solar renewable energy credit*: a credit you can earn from the state for energy produced from a photovoltaic array.
T5, T8, T12	A reference to a linear lamp diameter. The number represents increments of $1/8^{th}$ of an inch.
Temperature Setpoint	The temperature at which a temperature regulating device (thermostat, for example) has been set.
therm	100,000 Btu. Typically used as a measure of natural gas consumption.
tons	A unit of cooling capacity equal to 12,000 Btu/hr.
Turnkey	Provision of a complete product or service that is ready for immediate use.
VAV	*Variable air volume*
VFD	*Variable frequency drive*: a controller used to vary the speed of an electric motor.
WaterSense®	The symbol for water efficiency. The WaterSense® program is managed by the EPA.
Watt (W)	Unit of power commonly used to measure electricity use.