Local Government Energy Audit: Energy Audit Report

University Hall

1 Normal Avenue

Montclair, New Jersey 07043

Montclair State University

July 30, 2018

Final Report by:

TRC Energy Services

Disclaimer

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

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

Estimated installation costs are based on TRC's experience at similar facilities, pricing from local contractors and vendors, and/or cost estimates from *RS Means*. The owner of the facility is encouraged to independently confirm these cost estimates and to obtain multiple estimates when considering measure installations. Since actual installed costs can vary widely for certain measures and conditions, TRC and NJBPU do not guarantee installed cost estimates and shall in no event be held liable should actual installed costs vary from estimates.

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

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1 EXECUTIVE SUMMARY

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

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

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

1.1 Facility Summary

University Hall is a 328,754 square foot facility. The seven-story building includes class rooms, labs, lecture halls, offices, computer rooms, a data center, a coffee kiosk, catering facilities with commercial kitchen, and mechanical spaces.

Lighting at University Hall consists primarily of a mixture of T8 fluorescent sources, compact fluorescent lamps (CFLs), and some incandescent fixtures, all of which are inefficient as compared to currently available alternatives. Cooling is provided by chilled water (CHW) from the District Energy Plant to University Hall's mechanical room, where it is distributed by pumps to the building's air handling equipment. There are three (3) main air handling units (AHUs) for the building. High pressure steam is provided from the District Energy Plant to University Hall's mechanical room, where it is converted to heating and domestic hot water by steam to water heat exchangers. Heating hot water is distributed to the building's AHUs and VAV reheat coils. There are also several computer room air conditioning units (CRACs) that provide cooling to the data center and networking equipment located in the building. A thorough description of the facility and our observations are located in Section 2.

1.2 Your Cost Reduction Opportunities

Energy Conservation Measures

TRC evaluated and recommends eight (8) measures that together represent an opportunity for University Hall to reduce annual energy costs by roughly $57,391 and annual greenhouse gas emissions by 612,190 lbs CO_2e. We estimate that if all high priority measures are implemented as recommended, the project will pay for itself in roughly 8.5 years. TRC has defined high priority measures as the evaluated measures that have a simple payback less than the typical equipment life of the proposed equipment. The breakdown of existing and potential utility costs after project implementation are illustrated in Figure 1 and Figure 2, respectively. Together these measures represent an opportunity to reduce University Hall's annual energy use by 3%.

Figure 1 – Previous 12 Month Utility Costs

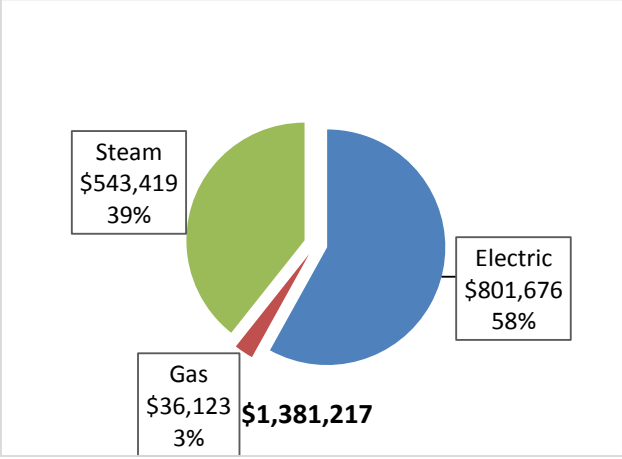
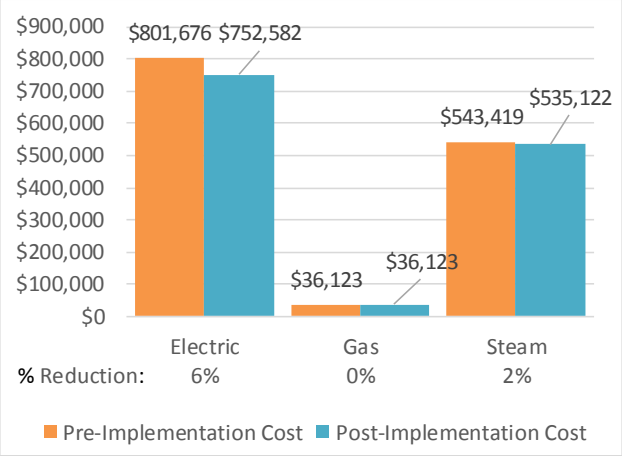


Figure 2 – Potential Post-Implementation Costs



A detailed description of University Hall's existing energy use can be found in Section 3.

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

Figure 3 – Summary of Energy Reduction Opportunities

Energy Conservation Measure		High Priority?	Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**397,317**	**0**	**86.1**	**0.0**	**$27,190.00**	**$276,340.65**	**$23,735.00**	**$252,605.65**	**9.3**	**400,095**
ECM 1	Install LED Fixtures	Yes	11,860		1.9	0.0	$811.66	$5,589.72	$1,240.00	$4,349.72	5.4	11,943
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,660		0.4	0.0	$113.59	$1,942.00	$100.00	$1,842.00	16.2	1,671
ECM 3	Retrofit Fixtures with LED Lamps	Yes	383,797		83.8	0.0	$26,264.76	$268,808.92	$22,395.00	$246,413.92	9.4	386,481
Lighting Control Measures			**75,720**	**0**	**15.3**	**0.0**	**$5,181.83**	**$61,120.00**	**$6,000.00**	**$55,120.00**	**10.6**	**76,250**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	50,468		11.4	0.0	$3,453.75	$42,120.00	$5,460.00	$36,660.00	10.6	50,821
ECM 5	Install Daylight Dimming Controls	Yes	1,872		0.3	0.0	$128.11	$1,000.00	$540.00	$460.00	3.6	1,885
ECM 6	Install High/Low Lighitng Controls	Yes	23,380		3.6	0.0	$1,599.97	$18,000.00	$0.00	$18,000.00	11.3	23,543
Variable Frequency Drive (VFD) Measures			**55,893**	**0**	**9.7**	**0.0**	**$3,824.98**	**$18,732.10**	**$4,800.00**	**$13,932.10**	**3.6**	**56,284**
ECM 7	Install VFDs on Chilled Water Pumps	Yes	55,893		9.7	0.0	$3,824.98	$18,732.10	$4,800.00	$13,932.10	3.6	56,284
HVAC System Improvements			**0**	**39,440**	**0.0**	**543.5**	**$21,193.92**	**$165,849.24**	**$0.00**	**$165,849.24**	**7.8**	**79,562**
ECM 8	Implement Demand Control Ventilation	Yes	0	39,440	0.0	543.5	$21,193.92	$165,849.24	$0.00	$165,849.24	7.8	79,562
TOTALS FOR HIGH PRIORITY MEASURES			**528,930**	**39,440**	**111.1**	**543.5**	**$57,390.73**	**$522,041.99**	**$34,535.00**	**$487,506.99**	**8.5**	**612,190**
TOTALS FOR ALL EVALUATED MEASURES			**528,930**	**39,440**	**111.1**	**543.5**	**$57,390.73**	**$522,041.99**	**$34,535.00**	**$487,506.99**	**8.5**	**612,190**

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

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

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

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

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

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

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

Energy Efficient Practices

TRC also identified 14 low cost or no cost energy efficient practices. A facility's energy performance can be significantly improved by employing certain behavioral or operational adjustments and by performing better routine maintenance on building systems. These practices can extend equipment lifetime, improve occupant comfort, provide better health and safety, as well as reduce annual energy and O&M costs. Potential opportunities identified at University Hall include:

- Reduce Air Leakage
- Close Doors and Windows
- Perform Proper Lighting Maintenance
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Turn Off Unneeded Motors
- Reduce Motor Short Cycling
- Perform Routine Motor Maintenance
- Clean Evaporator/Condenser Coils on AC Systems
- Clean and/or Replace HVAC Filters
- Check for and Seal Duct Leakage
- Perform Proper Water Heater Maintenance
- Install Plug Load Controls
- Water Conservation

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

On-Site Generation Measures

TRC evaluated the potential for installing on-site generation for University Hall. Based on the configuration of the site and its loads there is a low potential for installing any PV and combined heat and power self-generation measures.

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

1.3 Implementation Planning

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

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

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

- SmartStart
- Pay for Performance - Existing Building (P4P)
- Energy Savings Improvement Program (ESIP)

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

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

For larger facilities with limited capital availability to implement ECMs, project financing may be available through the Energy Savings Improvement Program (ESIP). Supported directly by the NJBPU, ESIP provides government agencies with project development, design, and implementation support services, as well as, attractive financing for implementing ECMs. An LGEA report (or other approved energy audit) is required for participation in ESIP. Please refer to Section 8.3 for additional information on the ESIP Program.

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

Additional information on relevant incentive programs is located in Section 8. You may also check the following website for more details: www.njcleanenergy.com/ci.

2 FACILITY INFORMATION AND EXISTING CONDITIONS

2.1 Project Contacts

Figure 4 – Project Contacts

Name	Role	E-Mail	Phone #
Customer			
Ana Pinto	Director of Energy Management	pintoa@mail.montclair.edu	973-655-3244
TRC Energy Services			
Mike Smith	Auditor	MJSmith@trcsolutions.com	732-855-0033

2.2 General Site Information

On May 19, 2017, TRC performed an energy audit at Montclair State's University Hall located in Montclair, New Jersey. TRC met with Ana Pinto to review the facility operations and help focus our investigation on specific energy-using systems.

University Hall is a 328,754 square foot facility. The building opened during the 2005-2006 school year. The seven-story building includes classrooms, learning labs, lecture halls, offices, computer rooms, a data center, catering facilities with a commercial kitchen, and mechanical spaces.

Lighting at University Hall consists primarily of a mixture of T8 fluorescent sources, compact fluorescent lamps (CFLs), and some incandescent fixtures, all of which are inefficient as compared to currently available alternatives. Cooling is provided by chilled water (CHW) from the District Energy Plant to University Hall's mechanical room, where it is distributed by pumps to the building's air handling equipment. There are three (3) main air handling units (AHUs) for the building. Low pressure steam is provided from the District Energy Plant to University Hall's mechanical room, where it is converted to heating (HHW) and domestic hot water (DHW) by steam to water heat exchangers. Heating hot water is distributed to the building's AHUs and VAV reheat coils. There are also several computer room air conditioning units (CRACs) that provide cooling to the data center and networking equipment located in the building.

2.3 Building Occupancy

The facility is open on weekdays for 52 weeks a year. During a typical day, the facility is occupied by approximately 350 students and staff.

Figure 5 - Building Schedule

Building Name	Weekday/Weekend	Operating Schedule
University Hall	Weekday	6 AM - 10 PM
University Hall	Weekend	Closed

2.4 Building Envelope

University Hall is a seven-story building constructed of concrete block and structural steel with a concrete facade. The building has a pitched, tile-covered perimeter roof with a flat center portion that is in good condition. The building has double-pane windows that are in good condition and show little sign of excessive infiltration. The exterior doors are constructed of metal and are in good condition.

2.5 On-Site Generation

The campus has a central cogeneration plant. The cogeneration plant uses natural gas fired turbines to produce electricity. Waste heat from the turbines is used to produce steam. The steam is delivered to some of the buildings on campus and used to produce chilled water which is delivered to some of the buildings on campus. See the campus summary report for additional information regarding the campus cogeneration plant.

University Hall does not have any on-site electric generation capacity.

2.6 Energy-Using Systems

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

Lighting System

Interior lighting at the facility is provided mostly by fixtures that contain linear fluorescent T8 lamps with electronic ballasts or fixtures with compact fluorescent screw-in lamps. The linear fluorescent fixtures are located in all areas of the building. Most of the fixtures are 1-lamp, 2-lamp or 3-lamp with 2-foot and 4-foot long troffers with diffusers. The site has upgraded some fixtures to more efficient LED technology, including the building exit signs. Some interior lighting fixtures are controlled by occupancy sensors, while others are controlled by manually operated switches. Exterior lighting is provided by metal halide high-intensity discharge (HID) fixtures.

Chilled Water System

Chilled water (CHW) is provided from the District Energy Plant to University Hall's mechanical room, where it is distributed by pumps to the building's air handling equipment. The water is distributed by one (1) primary variable speed 25 hp pump and three (3) variable speed 25 hp secondary pumps. The secondary pumps are staged: only one or two operate at any given time. The system has an estimated cooling capacity of 1,275 tons.

The equipment is approximately ten years old and in good condition.

Steam to Hot Water Heating System

The heating hot water (HHW) system consists of a steam to water heat exchanger in the mechanical room that receives low pressure steam from the District Energy Plant. From there, the HHW is distributed to the building's AHUs and variable air volume (VAV) heating coils. The HHW is distributed by two (2) 15 hp pumps equipped with variable speed drives (VFDs).

The equipment is approximately ten years old and in good condition.

Air Distribution System

There are three (3) main air handling units (AHUs) for the building that provide space conditioning and ventilation. AHU-3 has a 60 hp supply fan (SF) and a 25 hp return fan. Both AHU-1 and AHU -2 have four (4) supply fans each at 50 hp per fan motor. All of these fan motors are equipped with VFDs.

It was noted at the site visit that the supply air temperatures from the AHUs ranged from 54 to 56.5°F and that zone space temperatures were between 64 and 72°F.

The equipment is approximately ten years old and in good condition.

Direct Expansion Air Conditioning System (DX)

There are five (5) packaged units and thirty-four (34) computer room air conditioning (CRAC) units serving the data center and computer rooms throughout the building. The CRAC units have glycol-cooled condensers and a dry cooler for heat rejection. This system is served by two (2) dedicated 40 hp pumps. All of these units have five (5) tons of cooling capacity with efficiencies of 12 SEER.

The units are approximately ten years old and are in good condition.

Building Energy Management System (BEMS)

The majority of the facility is controlled with an Advanced Logic Controls (ALC) building energy management system (BEMS). The BEMS provides controls for the chiller, fans, pumps, and terminal units.

Domestic Water Heating (DHW) System

Low pressure steam from the District Energy Plant produces domestic hot water through a dedicated steam to water heat exchanger in the mechanical room. The DHW is distributed throughout the building via three (3) constant speed 2 hp pumps.

The pump motors are approximately ten years old and in good condition.

Food Service Equipment

The facility has a full commercial kitchen that is used for campus catering. The equipment includes gas steamers, griddles, rack oven, steam cookers, a fryer, and a low-temperature commercial dishwasher. Electric kitchen equipment includes convection ovens, griddles, and food preparation appliances.

Refrigeration

The commercial kitchen has three (3) walk-in refrigerators and one (1) low-temperature walk-in Kolpak freezer. There are additional stand-up refrigerators and freezers located in the kitchen, nutrition kitchen, and office spaces.

Building Plug Load

There are roughly 128 computer work stations throughout the facility. The majority of the computers are desktop units with LCD monitors. Other plug load equipment includes two (2) washers and two (2) dryers, coffee machines, flat screen monitors, and projectors.

There is also a data center in the building which is estimated to use 41 kW of power based on the cooling capacity of the units serving the space.

2.7 Water-Using Systems

Kitchen faucets have a 2.5 gallon per minute (gpm) rating. The common men's and women's restroom faucets have respective ratings of 2.2 and 1.5 gpm.

3 SITE ENERGY USE AND COSTS

This building receives electricity and natural gas through master meters. It also receives electricity, steam and chilled water from the campus central cogeneration plant. These utilities were prorated for individual buildings based on building size and function.

Prorated utility data were evaluated to determine the annual energy performance metrics for the building in energy cost per square foot and energy usage per square foot. These metrics are an estimate of the relative energy efficiency of this building. There are a number of factors that could cause the energy use of this building to vary from the "typical" energy usage profile for facilities with similar characteristics. Local weather conditions, building age and insulation levels, equipment efficiency, daily occupancy hours, changes in occupancy throughout the year, equipment operating hours, and energy efficient behavior of occupants all contribute to benchmarking scores. Please refer to the Benchmarking section within Section 3.6 for additional information.

3.1 Total Cost of Energy

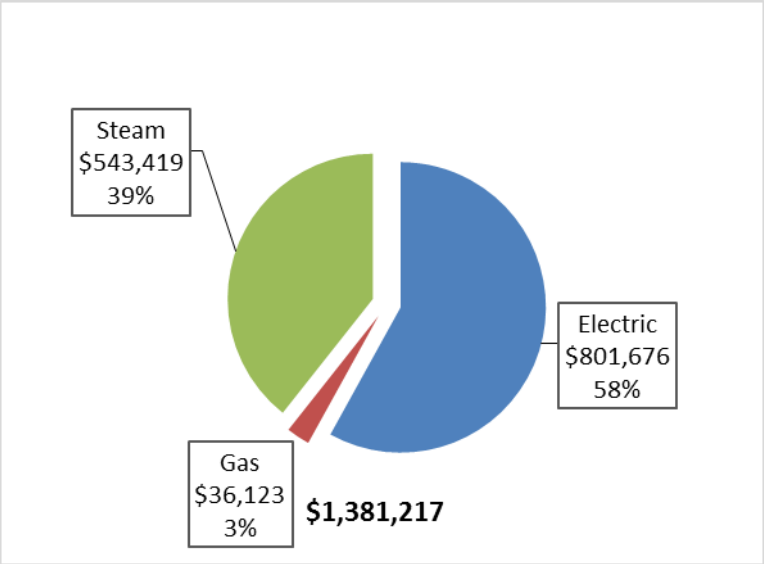
The following energy consumption and cost data is based on data that was provided by the campus for each utility. A profile of the annual energy consumption and energy cost of the facility was developed from this information.

Figure 6 - Utility Summary

Utility Summary for University Hall		
Fuel	**Usage**	**Cost**
Electricity	9,515,205 kWh	$801,676
Natural Gas	49,149 Therms	$36,123
Steam	29,813 kLbs	$543,419
Total		**$1,381,217**

The current annual energy cost for this facility is $1,381,217 as shown in the chart below.

Figure 7 - Energy Cost Breakdown



3.2 Electricity Usage

Electricity is provided by PSE&G and the campus cogeneration plant. The average cost for electricity purchased from PSE&G was $0.168/kWh, which is the blended rate that includes energy supply, distribution, and other charges. This rate is used throughout the analyses in this report to assess energy costs and savings.

Demand data (kW) is absent from the table below because it was not provided for the electric cogeneration plant generation, therefore, kW totals would be incomplete for this facility. The monthly electricity consumption is shown in the chart below.

Figure 8 - Electric Usage & Demand

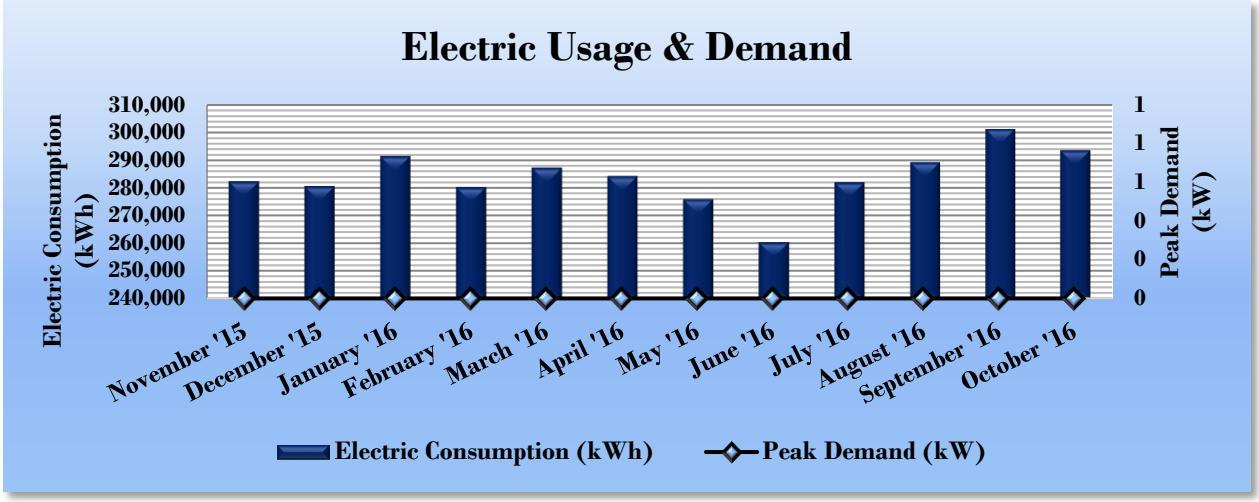


Figure 9 - Electric Usage & Demand

Electric Billing Data for University Hall				
Period Ending	Days in Period	Electric Usage (kWh)	Total Electric Cost	TRC Estimated Usage?
11/30/15	30	441,381	$31,456	Yes
12/31/15	31	375,116	$29,930	Yes
1/31/16	31	383,433	$26,073	Yes
2/28/16	28	379,840	$51,849	Yes
3/31/16	31	426,847	$29,099	Yes
4/30/16	30	534,263	$39,153	Yes
5/31/16	31	783,265	$63,741	Yes
6/30/16	30	1,148,251	$99,365	Yes
7/31/16	31	1,527,105	$132,884	Yes
8/31/16	31	1,534,280	$134,087	Yes
9/30/16	30	1,251,672	$106,072	Yes
10/31/16	31	729,750	$57,967	Yes
Totals	**365**	**9,515,205**	**$801,676**	12
Annual	**365**	**9,515,205**	**$801,676**	

3.3 Natural Gas Usage

Natural gas is provided by PSE&G. The average gas cost for the past 12 months is $0.735/therm, which is the blended rate used throughout the analyses in this report. The monthly gas consumption is shown in the chart below.

Figure 10 - Natural Gas Usage

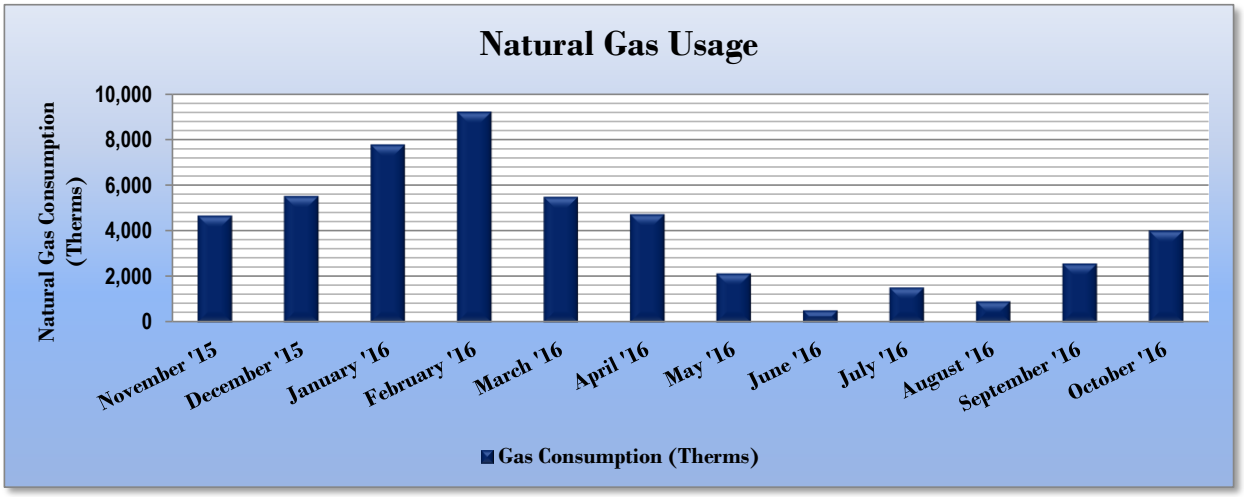


Figure 11 - Natural Gas Usage

Gas Billing Data for University Hall				
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost	TRC Estimated Usage?
11/30/15	30	4,675	$5,526	
12/31/15	31	5,526	$4,675	
1/31/16	31	7,792	$6,029	
2/28/16	28	9,219	$6,329	
3/31/16	31	5,491	$2,687	
4/30/16	30	4,738	$2,405	
5/31/16	31	2,142	$1,112	
6/30/16	30	522	$293	
7/31/16	31	1,527	$942	
8/31/16	31	919	$556	
9/30/16	30	2,572	$1,577	
10/31/16	31	4,026	$3,990	
Totals	**365**	**49,149**	**$36,123**	0
Annual	**365**	**49,149**	**$36,123**	

3.4 Steam Usage

Steam is provided by Campus CHP. The average steam cost for the past 12 months is $18.227/kLb, which is the blended rate used throughout the analyses in this report. The steam consumption is shown in the table below.

Figure 12 - Steam Usage

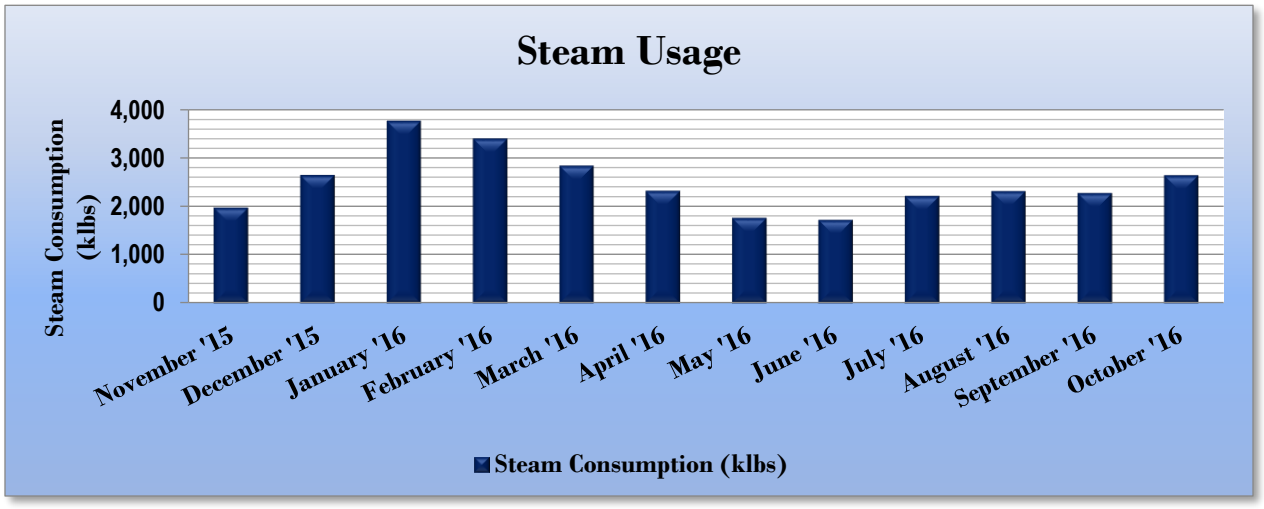


Figure 13 –Steam Usage

Steam Billing Data for University Hall				
Period Ending	Days in Period	Steam Usage (kLbs)	Fuel Cost	TRC Estimated Usage?
11/30/15	30	1,972	$30,059	Yes
12/31/15	31	2,644	$40,622	Yes
1/31/16	31	3,758	$58,673	Yes
2/28/16	28	3,390	$140,550	Yes
3/31/16	31	2,833	$43,034	Yes
4/30/16	30	2,318	$34,832	Yes
5/31/16	31	1,761	$27,465	Yes
6/30/16	30	1,717	$26,070	Yes
7/31/16	31	2,211	$33,304	Yes
8/31/16	31	2,308	$34,807	Yes
9/30/16	30	2,270	$34,053	Yes
10/31/16	31	2,632	$39,950	Yes
Totals	**365**	**29,813**	**$543,419**	12
Annual	**365**	**29,813**	**$543,419**	

3.5 Chilled Water Usage

Chilled water is provided by the campus cogeneration plant. The average chilled water cost is $0.327/ton-hr, which is the blended rate used throughout the analyses in this report. The chilled water consumption is shown in the table below. Chilled water is produced by steam engine chillers at the cogeneration plant, however, for ease of analysis and reporting chilled water use and cost has been combined with electricity use and cost in this report in the summary graphics.

Figure 14 – Chilled Water Usage

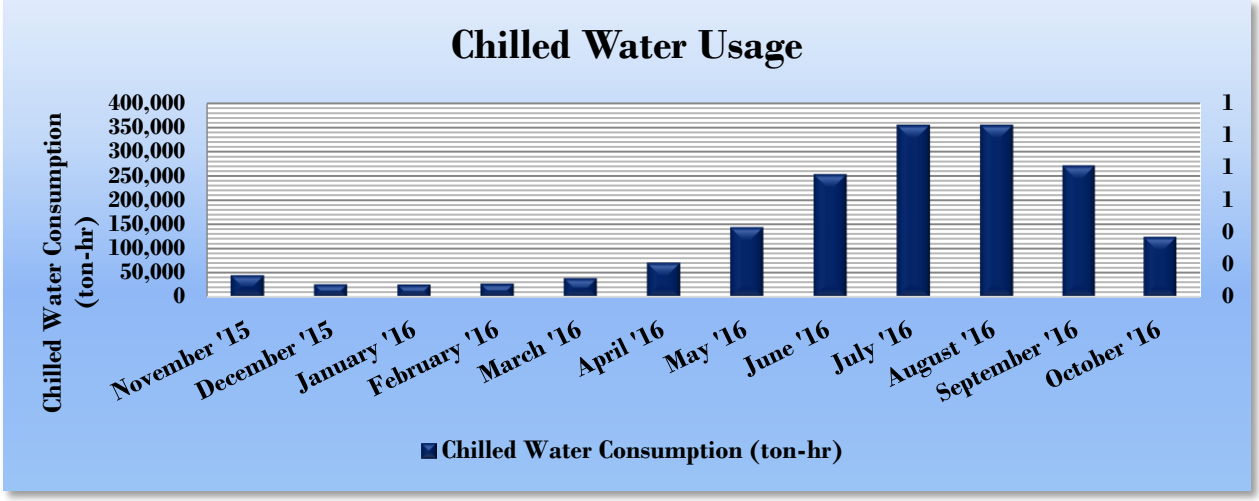


Figure 15 – Chilled Water Usage

Chilled Water Billing Data for University Hall				
Period Ending	Days in Period	Chilled Water Usage (ton-hr)	Total Cost	TRC Estimated Usage?
11/30/15	30	45,251	$14,817	Yes
12/31/15	31	26,908	$8,857	Yes
1/31/16	31	26,222	$8,730	Yes
2/28/16	28	28,334	$11,607	Yes
3/31/16	31	39,742	$12,979	Yes
4/30/16	30	71,152	$23,066	Yes
5/31/16	31	144,283	$47,994	Yes
6/30/16	30	252,434	$82,418	Yes
7/31/16	31	354,051	$114,963	Yes
8/31/16	31	354,051	$115,075	Yes
9/30/16	30	270,299	$87,523	Yes
10/31/16	31	124,076	$40,502	Yes
Totals	**365**	**1,736,803**	**$568,530**	12
Annual	**365**	**1,736,803**	**$568,530**	

3.6 Benchmarking

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

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

Figure 16 - Energy Use Intensity Comparison – Existing Conditions

Energy Use Intensity Comparison - Existing Conditions		
	University Hall	National Median Building Type: Higher Education - Public
Source Energy Use Intensity (kBtu/ft^2)	455.7	262.6
Site Energy Use Intensity (kBtu/ft^2)	222.0	130.7

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

Figure 17 - Energy Use Intensity Comparison – Following Installation of Recommended Measures

Energy Use Intensity Comparison - Following Installation of Recommended Measures		
	University Hall	National Median Building Type: Higher Education - Public
Source Energy Use Intensity (kBtu/ft^2)	436.5	262.6
Site Energy Use Intensity (kBtu/ft^2)	214.8	130.7

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

As the electric and gas accounts were shared between various buildings, it was not possible to benchmark these buildings and provide a score individually. A campus wide Portfolio Manager® Statement of Energy Performance (SEP) was generated.

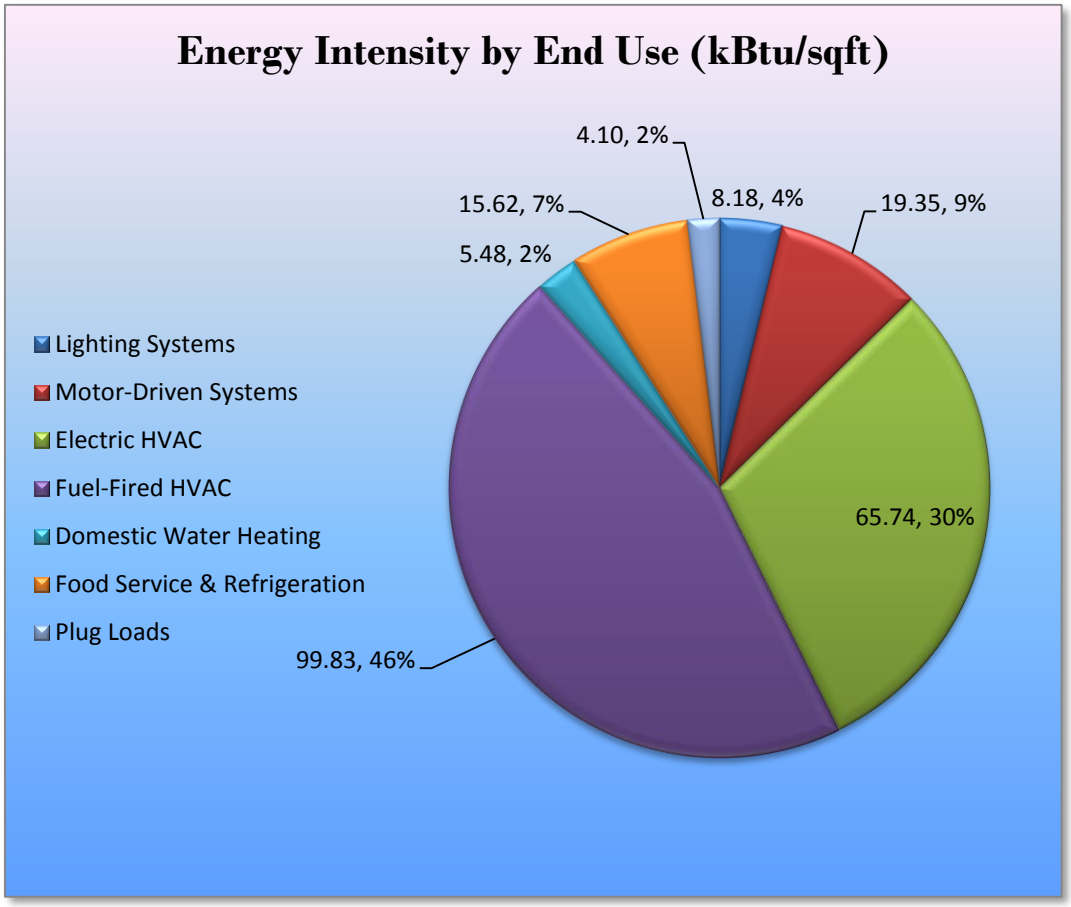
For more information on ENERGY STAR® certification go to: https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1.

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

3.7 Energy End-Use Breakdown

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

Figure 18 - Energy Balance (% and kBtu/SF)



4 ENERGY CONSERVATION MEASURES

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

The following sections describe the evaluated measures.

4.1 High Priority ECMs

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

Figure 19 – Summary of High Priority ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**397,317**	**0**	**86.1**	**0.0**	**$27,190.00**	**$276,340.65**	**$23,735.00**	**$252,605.65**	**9.3**	**400,095**
ECM 1	Install LED Fixtures	11,860	0	1.9	0.0	$811.66	$5,589.72	$1,240.00	$4,349.72	5.4	11,943
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	1,660	0	0.4	0.0	$113.59	$1,942.00	$100.00	$1,842.00	16.2	1,671
ECM 3	Retrofit Fixtures with LED Lamps	383,797	0	83.8	0.0	$26,264.76	$268,808.92	$22,395.00	$246,413.92	9.4	386,481
Lighting Control Measures		**75,720**	**0**	**15.3**	**0.0**	**$5,181.83**	**$61,120.00**	**$6,000.00**	**$55,120.00**	**10.6**	**76,250**
ECM 4	Install Occupancy Sensor Lighting Controls	50,468	0	11.4	0.0	$3,453.75	$42,120.00	$5,460.00	$36,660.00	10.6	50,821
ECM 5	Install Daylight Dimming Controls	1,872	0	0.3	0.0	$128.11	$1,000.00	$540.00	$460.00	3.6	1,885
ECM 6	Install High/Low Lighitng Controls	23,380	0	3.6	0.0	$1,599.97	$18,000.00	$0.00	$18,000.00	11.3	23,543
Variable Frequency Drive (VFD) Measures		**55,893**	**0**	**9.7**	**0.0**	**$3,824.98**	**$18,732.10**	**$4,800.00**	**$13,932.10**	**3.6**	**56,284**
ECM 7	Install VFDs on Chilled Water Pumps	55,893	0	9.7	0.0	$3,824.98	$18,732.10	$4,800.00	$13,932.10	3.6	56,284
HVAC System Improvements		**0**	**39,440**	**0.0**	**543.5**	**$21,193.92**	**$165,849.24**	**$0.00**	**$165,849.24**	**7.8**	**79,562**
ECM 8	Implement Demand Control Ventilation	0	39,440	0.0	543.5	$21,193.92	$165,849.24	$0.00	$165,849.24	7.8	79,562
TOTALS		**528,930**	**39,440**	**111.1**	**543.5**	**$57,390.73**	**$522,041.99**	**$34,535.00**	**$487,506.99**	**8.5**	**612,190**

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

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

4.2 Lighting Upgrades

Our recommendations for lighting upgrades to existing lighting fixtures are summarized in Figure 20 below.

Figure 20 – Summary of Lighting Upgrade ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**397,317**	**0**	**86.1**	**0.0**	**$27,190.00**	**$276,340.65**	**$23,735.00**	**$252,605.65**	**9.3**	**400,095**
ECM 1	Install LED Fixtures	11,860	0	1.9	0.0	$811.66	$5,589.72	$1,240.00	$4,349.72	5.4	11,943
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	1,660	0	0.4	0.0	$113.59	$1,942.00	$100.00	$1,842.00	16.2	1,671
ECM 3	Retrofit Fixtures with LED Lamps	383,797	0	83.8	0.0	$26,264.76	$268,808.92	$22,395.00	$246,413.92	9.4	386,481

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

ECM 1: Install LED Fixtures

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	878	0	0.3	0.0	$60.09	$901.60	$40.00	$861.60	14.3	884
Exterior	10,982	0	1.7	0.0	$751.57	$4,688.12	$1,200.00	$3,488.12	4.6	11,059

Measure Description

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

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

ECM 2: Retrofit Fluorescent Fixtures with LED Lamps and Drivers

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	1,660	0	0.4	0.0	$113.59	$1,942.00	$100.00	$1,842.00	16.2	1,671
Exterior	0	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.0	0

Measure Description

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

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

ECM 3: Retrofit Fixtures with LED Lamps

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	383,476	0	83.3	0.0	$26,242.77	$268,545.21	$22,365.00	$246,180.21	9.4	386,157
Exterior	321	0	0.5	0.0	$21.99	$263.72	$30.00	$233.72	10.6	324

Measure Description

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

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

4.3 Lighting Control Measures

Our recommendations for lighting control measures are summarized in Figure 21 below.

Figure 21 – Summary of Lighting Control ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Lighting Control Measures		**75,720**	**0**	**15.3**	**0.0**	**$5,181.83**	**$61,120.00**	**$6,000.00**	**$55,120.00**	**10.6**	**76,250**
ECM 4	Install Occupancy Sensor Lighting Controls	50,468	0	11.4	0.0	$3,453.75	$42,120.00	$5,460.00	$36,660.00	10.6	50,821
ECM 5	Install Daylight Dimming Controls	1,872	0	0.3	0.0	$128.11	$1,000.00	$540.00	$460.00	3.6	1,885
ECM 6	Install High/Low Lighitng Controls	23,380	0	3.6	0.0	$1,599.97	$18,000.00	$0.00	$18,000.00	11.3	23,543

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

ECM 4: Install Occupancy Sensor Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
50,468	0	11.4	0.0	$3,453.75	$42,120.00	$5,460.00	$36,660.00	10.6	50,821

Measure Description

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

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

ECM 5: Install Daylight Dimming Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
1,872	0	0.3	0.0	$128.11	$1,000.00	$540.00	$460.00	3.6	1,885

Measure Description

We recommend installing daylight dimming controls that use photosensors to reduce electric lighting in areas when ample daylight lighting is present. Photosensor controls are recommended for fixtures that are adjacent to windows that receive lots of sunlight. As sunlight level increase in the room, fixture lighting is decreased or turned off. This measure reduces energy use in spaces where sufficient lighting levels can be met by ambient daylight.

Optimum light levels and the method of dimming should be determined during lighting design. We recommend a comprehensive approach to lighting design that upgrades both the lighting fixtures and the controls together for maximum energy savings and improved lighting for occupants.

ECM 6: Install High/Low Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
23,380	0	3.6	0.0	$1,599.97	$18,000.00	$0.00	$18,000.00	11.3	23,543

Measure Description

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

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

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

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

4.4 Variable Frequency Drive Measures

Our recommendations for variable frequency drive (VFD) measures are summarized in Figure 22 below.

Figure 22 – Summary of Variable Frequency Drive ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Variable Frequency Drive (VFD) Measures		**55,893**	**0**	**9.7**	**0.0**	**$3,824.98**	**$18,732.10**	**$4,800.00**	**$13,932.10**	**3.6**	**56,284**
ECM 7	Install VFDs on Chilled Water Pumps	55,893	0	9.7	0.0	$3,824.98	$18,732.10	$4,800.00	$13,932.10	3.6	56,284

ECM 7: Install VFDs on Data Center Glycol Condenser Pumps

Summary of Measure Economics

Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
55,893	0	9.7	0.0	$3,824.98	$18,732.10	$4,800.00	$13,932.10	3.6	56,284

Measure Description

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

The control system should be programmed to maintain the minimum flow through the condenser and to prevent pump cavitation.

4.5 HVAC System Upgrades

Our recommendation for HVAC system improvement are summarized in Figure 23 below.

Figure 23 - Summary of HVAC System Improvement ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
HVAC System Improvements		**0**	**39,440**	**0.0**	**543.5**	**$21,193.92**	**$165,849.24**	**$0.00**	**$165,849.24**	**7.8**	**79,562**
ECM 8	Implement Demand Control Ventilation	0	39,440	0.0	543.5	$21,193.92	$165,849.24	$0.00	$165,849.24	7.8	79,562

ECM 8: Implement Demand Control Ventilation (DCV)

Summary of Measure Economics

Annual Electric Savings (kWh)	Chilled Water Savings (Ton-Hr)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
0	39,440	0.0	543.5	$21,193.92	$165,849.24	$0.00	$165,849.24	7.8	79,562

Measure Description

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

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

5 ENERGY EFFICIENT PRACTICES

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

Reduce Air Leakage

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

Close Doors and Windows

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

Perform Proper Lighting Maintenance

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

Develop a Lighting Maintenance Schedule

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

Ensure Lighting Controls Are Operating Properly

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

Turn Off Unneeded Motors

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

Reduce Motor Short Cycling

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

Perform Routine Motor Maintenance

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

Clean Evaporator/Condenser Coils on AC Systems

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

Clean and/or Replace HVAC Filters

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

Check for and Seal Duct Leakage

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

Perform Proper Water Heater Maintenance

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

Plug Load Controls

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

Water Conservation

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

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

6 On-Site Generation Measures

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

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

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

6.1 Photovoltaic

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

A preliminary screening based on the campus' electric demand and the size and location of free areas on campus was performed and is addressed in the campus level summary report.

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

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

6.2 Combined Heat and Power

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

The campus has a CHP plant that uses natural gas fired turbines to generate electricity. Waste heat from the turbines is used to produce steam which is either delivered to buildings on campus or used to produce chilled water which is delivered to buildings on campus. Since the campus has a CHP that serves a significant portion of the campus further evaluation of individual building CHP applications were not done.

7 DEMAND RESPONSE

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

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

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

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

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

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

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

In our opinion this building is not a good candidate for DR.

8 PROJECT FUNDING / INCENTIVES

The NJCEP is able to provide the incentive programs described below, and other benefits to ratepayers, because of the Societal Benefits Charge (SBC) Fund. The SBC was created by the State of New Jersey's Electricity Restructuring Law (1999), which requires all customers of investor-owned electric and gas utilities to pay a surcharge on their monthly energy bills. As a customer of a state-regulated electric or gas utility and therefore a contributor to the fund your organization is eligible to participate in the LGEA program and also eligible to receive incentive payment for qualifying energy efficiency measures. Also available through the NJBPU are some alternative financing programs described later in this section. Please refer to Figure 24 for a list of the eligible programs identified for each recommended ECM.

Figure 24 - ECM Incentive Program Eligibility

Energy Conservation Measure		SmartStart Prescriptive	SmartStart Custom	Direct Install	Pay For Performance Existing Buildings	Large Energy Users Program	Combined Heat & Power and Fuel Cell
ECM 1	Install LED Fixtures	X			X		
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	X			X		
ECM 3	Retrofit Fixtures with LED Lamps	X			X		
ECM 4	Install Occupancy Sensor Lighting Controls	X			X		
ECM 5	Install Daylight Dimming Controls				X		
ECM 6	Install High/Low Lighitng Controls				X		
ECM 7	Install VFDs on Chilled Water Pumps	X			X		
ECM 8	Implement Demand Control Ventilation				X		

SmartStart is generally well-suited for implementation of individual measures or small group of measures. It provides flexibility to install measures at your own pace using in-house staff or a preferred contractor. Direct Install caters to small to mid-size facilities that can bundle multiple ECMs together. This can greatly simplify participation and may lead to higher incentive amounts, but requires the use of pre-approved contractors. The Pay for Performance (P4P) program is a "whole-building" energy improvement program designed for larger facilities. It requires implementation of multiple measures meeting minimum savings thresholds, as well as use of pre-approved consultants. This facility does not meet all of the criteria for participating in the P4P program based on the measures identified in this study. However, since additional measures may be identified during the P4P evaluation and the facility is close to meeting the P4P program criteria it is worth considering the P4P program for this site. The Large Energy Users Program (LEUP) is available to New Jersey's largest energy users giving them flexibility to install as little or as many measures, in a single facility or several facilities, with incentives capped based on the entity's annual energy consumption. LEUP applicants can use in-house staff or a preferred contractor.

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

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

8.1 SmartStart

Overview

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

Equipment with Prescriptive Incentives Currently Available:

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

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

Incentives

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

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

How to Participate

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

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

8.2 Pay for Performance - Existing Buildings

Overview

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

Incentives

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

How to Participate

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

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

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

8.3 Energy Savings Improvement Program

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

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

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

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

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

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

9 ENERGY PURCHASING AND PROCUREMENT STRATEGIES

9.1 Retail Electric Supply Options

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

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

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

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

9.2 Retail Natural Gas Supply Options

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

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

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

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

APPENDIX A: EQUIPMENT INVENTORY & RECOMMENDATIONS

Lighting Inventory & Recommendations

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
AHU 3	6	Incandescent: Screw In	Wall Switch	150	420	Relamp	Yes	6	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	294	0.52	338	0.0	$23.15	$533.72	$65.00	20.25
AHU 3	6	LED Screw-In Lamps: Screw In	Wall Switch	18	420	None	No	6	LED Screw-In Lamps: Screw In	Wall Switch	18	420	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Rooftop Com Room	6	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	700	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	700	0.03	38	0.0	$2.58	$263.72	$0.00	102.29
Elevator Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,400	0.10	213	0.0	$14.54	$234.00	$40.00	13.34
Roof Access	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,400	0.10	213	0.0	$14.54	$234.00	$40.00	13.34
Stiar 4	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	18	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,160	0.44	2,842	0.0	$194.47	$1,053.00	$180.00	4.49
Stair 2	15	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	33	4,160	Relamp	No	15	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	4,160	0.18	1,148	0.0	$78.57	$723.00	$150.00	7.29
Stair 2	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
7305 Com	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	700	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	700	0.02	27	0.0	$1.82	$58.50	$10.00	26.68
Elevator Room	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	700	Relamp	No	10	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	700	0.24	266	0.0	$18.18	$585.00	$100.00	26.68
7F Stair Lobby	10	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	10	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.11	746	0.0	$51.07	$879.06	$0.00	17.21
7F Stair Lobby	24	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,160	Relamp	No	24	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	4,160	0.31	2,009	0.0	$137.50	$861.60	$120.00	5.39
7F Stair Lobby	1	Incandescent: Screw In	Wall Switch	75	4,160	Relamp	No	1	LED Screw-In Lamps: Screw-in LED (11W)	Wall Switch	11	4,160	0.05	305	0.0	$20.87	$43.95	$5.00	1.87
7700	4	LED Screw-In Lamps: MR16	Wall Switch	7	2,800	None	No	4	LED Screw-In Lamps: MR16	Wall Switch	7	2,800	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
7700	8	Incandescent: Screw In	Wall Switch	75	2,800	Relamp	Yes	8	LED Screw-In Lamps: Screw-in LED (11W)	Occupancy Sensor	11	1,960	0.40	1,729	0.0	$118.33	$621.62	$75.00	4.62
7500	192	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	Yes	192	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,960	3.09	13,509	0.0	$924.44	$7,162.80	$995.00	6.67
7500	12	LED Screw-In Lamps: Screw In	Wall Switch	9	2,800	None	No	12	LED Screw-In Lamps: Screw In	Wall Switch	9	2,800	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
7500	16	Compact Fluorescent: 6L Chandelier	Wall Switch	156	2,800	Relamp	No	16	LED Screw-In Lamps: Screw-in LED (18W) 6L	Wall Switch	108	2,800	0.57	2,473	0.0	$169.23	$4,219.49	$0.00	24.93
7500	42	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,800	Relamp	Yes	42	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,960	0.82	3,587	0.0	$245.44	$3,962.05	$35.00	16.00
7002	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	2	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.07	319	0.0	$21.82	$150.40	$30.00	5.52
7004	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	None	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
7F Hall	9	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	9	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.18	1,142	0.0	$78.14	$991.15	$0.00	12.68
7006	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,960	0.09	403	0.0	$27.57	$420.40	$65.00	12.89
Men's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,960	0.10	422	0.0	$28.89	$485.40	$65.00	14.55
Men's Room	4	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,800	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,960	0.08	342	0.0	$23.38	$621.62	$35.00	25.10

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Women's Room	10	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	Yes	10	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,960	0.16	704	0.0	$48.15	$629.00	$85.00	11.30
Women's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,800	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	2,800	0.03	151	0.0	$10.31	$263.72	$0.00	25.57
7F Hall	17	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	26	4,160	None	Yes	17	LED - Linear Tubes: (3) 2' Lamps	High/Low Control	26	2,912	0.10	622	0.0	$42.58	$600.00	$0.00	14.09
7013	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,960	0.09	403	0.0	$27.57	$420.40	$65.00	12.89
7026	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,960	0.09	403	0.0	$27.57	$420.40	$65.00	12.89
7027	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.02	106	0.0	$7.27	$58.50	$10.00	6.67
Kitchen	14	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	14	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.51	2,231	0.0	$152.71	$1,052.80	$210.00	5.52
Kitchen	2	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	2,800	Relamp	No	2	LED - Linear Tubes: (3) 2' Lamps	Wall Switch	26	2,800	0.04	177	0.0	$12.12	$123.40	$30.00	7.71
Kitchen Office	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
7015 Storage	5	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	5	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.18	797	0.0	$54.54	$376.00	$75.00	5.52
Range Hood	5	Incandescent: Screw In	Wall Switch	150	2,800	Relamp	No	5	LED Screw-In Lamps: Screw-in LED (23W)	Wall Switch	23	2,800	0.47	2,053	0.0	$140.48	$219.77	$25.00	1.39
Men's Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
Women's Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
Lockers	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
7034	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.02	133	0.0	$9.09	$58.50	$10.00	5.34
6th Floor Hall	12	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	4,160	Relamp	Yes	12	LED Screw-In Lamps: Plug-in LED (18W) 1L	High/Low Control	18	2,912	0.12	761	0.0	$52.09	$927.44	$0.00	17.80
6017	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
6020 Com	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	700	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	700	0.02	27	0.0	$1.82	$58.50	$10.00	26.68
Men's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.05	234	0.0	$16.04	$143.60	$20.00	7.70
Men's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59
Women's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.05	234	0.0	$16.04	$143.60	$20.00	7.70
Women's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59
6016	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	8	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.29	1,594	0.0	$109.08	$601.60	$120.00	4.42
Data Center	24	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	24	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	1.10	6,042	0.0	$413.50	$2,074.80	$395.00	4.06
Data Center	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.55	3,021	0.0	$206.75	$1,172.40	$215.00	4.63

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Data Center	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	3	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.07	398	0.0	$27.27	$175.50	$30.00	5.34
Open Area	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,160	0.15	947	0.0	$64.82	$351.00	$60.00	4.49
6036	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.19	1,063	0.0	$72.72	$468.00	$80.00	5.34
6010	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	4	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.15	797	0.0	$54.54	$300.80	$60.00	4.42
6023	2	Compact Fluorescent: FT40DL - 3L	Occupancy Sensor	120	2,912	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,912	0.05	241	0.0	$16.50	$263.72	$0.00	15.98
6025	2	Compact Fluorescent: FT40DL - 3L	Occupancy Sensor	120	2,912	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,912	0.05	241	0.0	$16.50	$263.72	$0.00	15.98
6027	2	Compact Fluorescent: FT40DL - 3L	Occupancy Sensor	120	2,912	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,912	0.05	241	0.0	$16.50	$263.72	$0.00	15.98
Cubicle Area	48	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	48	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	1.17	6,376	0.0	$436.31	$2,808.00	$480.00	5.34
6037	2	Compact Fluorescent: FT40DL - 3L	Wall Switch	120	3,500	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,450	0.09	493	0.0	$33.71	$533.72	$35.00	14.79
6065	2	Compact Fluorescent: FT40DL - 3L	Wall Switch	120	3,500	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,450	0.09	493	0.0	$33.71	$533.72	$35.00	14.79
Lobby	13	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	13	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.25	1,649	0.0	$112.87	$1,412.78	$35.00	12.21
Conference Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.18	806	0.0	$55.13	$621.00	$95.00	9.54
6031	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.09	504	0.0	$34.46	$420.40	$65.00	10.31
Cube Area	24	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	24	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.58	3,188	0.0	$218.15	$1,404.00	$240.00	5.34
Cube Area	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	16	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.39	2,125	0.0	$145.44	$936.00	$160.00	5.34
Cube Area	3	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	3,500	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (11W) 2L	Wall Switch	34	3,500	0.03	174	0.0	$11.90	$263.72	$0.00	22.16
6010	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.18	1,007	0.0	$68.92	$570.80	$95.00	6.90
6014	4	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	4	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.18	1,007	0.0	$68.92	$570.80	$95.00	6.90
6015	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.55	3,021	0.0	$206.75	$1,172.40	$215.00	4.63
6018	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.02	133	0.0	$9.09	$58.50	$10.00	5.34
5F Hall	4	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.07	468	0.0	$32.06	$551.62	$0.00	17.21
5109 Com	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,160	0.02	158	0.0	$10.80	$58.50	$10.00	4.49
5111	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
Men's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.05	234	0.0	$16.04	$143.60	$20.00	7.70
Men's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Women's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.05	234	0.0	$16.04	$143.60	$20.00	7.70
Women's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59
Open Area	90	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	90	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	2.76	15,106	0.0	$1,033.75	$5,535.00	$935.00	4.45
5104	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.05	266	0.0	$18.18	$117.00	$20.00	5.34
5107	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.09	504	0.0	$34.46	$445.50	$65.00	11.04
5105	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.18	1,007	0.0	$68.92	$621.00	$95.00	7.63
5018	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.49	2,685	0.0	$183.78	$1,206.00	$195.00	5.50
5013	20	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	20	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.61	3,357	0.0	$229.72	$1,440.00	$235.00	5.25
5016	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,450	0.10	528	0.0	$36.11	$485.40	$65.00	11.64
5014	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	8,760	3,500	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	12.85	70,273	0.0	$4,809.05	$420.40	$65.00	0.07
Hall	18	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	18	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.32	2,108	0.0	$144.26	$2,182.31	$0.00	15.13
Hall	3	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.03	224	0.0	$15.32	$263.72	$0.00	17.21
IT Lobby	14	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	14	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.27	1,776	0.0	$121.55	$1,500.68	$35.00	12.06
IT Lobby	3	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (11W) 2L	Wall Switch	34	4,160	0.03	207	0.0	$14.14	$263.72	$0.00	18.65
Computer Lab	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.49	2,685	0.0	$183.78	$1,206.00	$195.00	5.50
Men's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.10	439	0.0	$30.04	$485.40	$65.00	13.99
Men's Room	5	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.10	444	0.0	$30.39	$439.53	$35.00	13.31
Women's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.10	439	0.0	$30.04	$485.40	$65.00	13.99
Women's Room	5	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.10	444	0.0	$30.39	$439.53	$35.00	13.31
Computer Lab	29	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	29	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.89	4,867	0.0	$333.10	$1,966.50	$325.00	4.93
5005	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.25	1,343	0.0	$91.89	$738.00	$115.00	6.78
Stair 3	13	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	13	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,160	0.32	2,052	0.0	$140.45	$760.50	$130.00	4.49
4F Hall	49	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	49	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.88	5,739	0.0	$392.71	$5,907.39	$0.00	15.04
4F Hall	18	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	18	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.35	2,284	0.0	$156.28	$2,182.31	$0.00	13.96
4012	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
4014	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4016	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4018	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.09	504	0.0	$34.46	$420.40	$65.00	10.31
4020	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4022	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4024	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4026	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4030	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4032	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4034	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.09	504	0.0	$34.46	$420.40	$65.00	10.31
4036	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4038	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4040	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4021	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	8	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.25	1,343	0.0	$91.89	$738.00	$115.00	6.78
4019	6	Compact Fluorescent: FT40DL - 2L	Wall Switch	80	3,500	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	56	2,450	0.18	985	0.0	$67.43	$797.44	$35.00	11.31
4017	9	Compact Fluorescent: FT40DL - 2L	Wall Switch	80	3,500	Relamp	Yes	9	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	56	2,450	0.27	1,478	0.0	$101.14	$1,061.15	$35.00	10.15
4010	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.14	755	0.0	$51.69	$495.60	$80.00	8.04
4011	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.37	2,014	0.0	$137.83	$871.60	$155.00	5.20
4011	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	15	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.46	2,518	0.0	$172.29	$877.50	$150.00	4.22
4008	21	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	21	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.64	3,525	0.0	$241.21	$1,498.50	$245.00	5.20
4008	3	Compact Fluorescent: FT40DL - 3L	Wall Switch	120	3,500	Relamp	Yes	3	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,450	0.14	739	0.0	$50.57	$665.58	$35.00	12.47
4009	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.09	504	0.0	$34.46	$420.40	$65.00	10.31
4006	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.28	1,511	0.0	$103.38	$721.20	$125.00	5.77
4006	4	Compact Fluorescent: FT40DL	Wall Switch	40	3,500	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,500	0.04	193	0.0	$13.22	$175.81	$0.00	13.30
4007	28	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	28	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.86	4,700	0.0	$321.61	$1,908.00	$315.00	4.95

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
4007A	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4004	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	6	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.28	1,511	0.0	$103.38	$721.20	$125.00	5.77
4002	12	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	12	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.55	3,021	0.0	$206.75	$1,172.40	$215.00	4.63
Men's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.05	282	0.0	$19.28	$143.60	$20.00	6.41
Men's Room	4	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	3,500	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,450	0.08	427	0.0	$29.22	$621.62	$35.00	20.08
Women's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,450	0.10	528	0.0	$36.11	$485.40	$65.00	11.64
Women's Room	5	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	3,500	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,450	0.10	534	0.0	$36.52	$709.53	$35.00	18.47
Elevator Lobby	19	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	19	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.37	2,411	0.0	$164.96	$1,940.21	$35.00	11.55
4055	6	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	3,500	Relamp	Yes	6	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,450	0.16	849	0.0	$58.09	$640.20	$125.00	8.87
4058 Kitchen	7	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	3,500	Relamp	Yes	7	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,450	0.18	990	0.0	$67.77	$701.90	$140.00	8.29
4044 Com	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	700	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	700	0.02	27	0.0	$1.82	$58.50	$10.00	26.68
4042	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.02	133	0.0	$9.09	$58.50	$10.00	5.34
4046	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.02	133	0.0	$9.09	$58.50	$10.00	5.34
4048	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.37	2,014	0.0	$137.83	$972.00	$155.00	5.93
4050	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.37	2,014	0.0	$137.83	$972.00	$155.00	5.93
4052	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.37	2,014	0.0	$137.83	$972.00	$155.00	5.93
4054	10	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	10	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.46	2,518	0.0	$172.29	$1,022.00	$185.00	4.86
4054	4	Compact Fluorescent: FT40DL	Wall Switch	40	3,500	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,500	0.04	193	0.0	$13.22	$175.81	$0.00	13.30
Hydrotherapy Lab	4	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	2,100	Relamp	Yes	4	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	1,470	0.10	340	0.0	$23.24	$516.80	$95.00	18.15
4101	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
Display	4	LED Screw-In Lamps: MR16	Wall Switch	7	4,160	None	No	4	LED Screw-In Lamps: MR16	Wall Switch	7	4,160	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
4103	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4105	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4107	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4109	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
4108	5	Linear Fluorescent - T8: 2' T8 (17W) - 3L	Wall Switch	53	3,500	Relamp	Yes	5	LED - Linear Tubes: (3) 2' Lamps	Occupancy Sensor	26	2,450	0.13	707	0.0	$48.41	$578.50	$110.00	9.68
4111	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4113	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4115	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4117	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4119	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4121	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4116	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,450	0.31	1,678	0.0	$114.86	$855.00	$135.00	6.27
Hall	25	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	25	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.45	2,928	0.0	$200.36	$2,997.65	$0.00	14.96
Hall	8	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.16	1,015	0.0	$69.46	$903.25	$0.00	13.00
4123	3	Compact Fluorescent: FT40DL	Wall Switch	40	3,500	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,500	0.03	145	0.0	$9.92	$131.86	$0.00	13.30
4125	12	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	3,500	Relamp	Yes	12	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,450	0.23	1,281	0.0	$87.66	$1,324.87	$35.00	14.71
4128	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,500	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,500	0.02	133	0.0	$9.09	$58.50	$10.00	5.34
4147	18	Linear Fluorescent - T8: 2' T8 (17W) - 1L	Wall Switch	22	3,500	Relamp	Yes	18	LED - Linear Tubes: (1) 2' Lamp	Occupancy Sensor	9	2,450	0.21	1,163	0.0	$79.58	$844.20	$125.00	9.04
4131	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,450	0.09	504	0.0	$34.46	$420.40	$65.00	10.31
4131	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4135	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4137	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4139	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4141	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4143	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4145	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4147	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4149	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4151	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
4153	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4155	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4157	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4159	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4161	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4163	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
4171	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,500	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,500	0.04	199	0.0	$13.63	$75.20	$15.00	4.42
Men's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,160	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	4,160	0.05	335	0.0	$22.92	$143.60	$20.00	5.39
Men's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.03	224	0.0	$15.32	$263.72	$0.00	17.21
Women's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	4,160	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	4,160	0.05	335	0.0	$22.92	$143.60	$20.00	5.39
Women's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.03	224	0.0	$15.32	$263.72	$0.00	17.21
4173	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4175	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4201	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4203	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4202	1	Compact Fluorescent: FT40DL	Wall Switch	40	3,500	Relamp	No	1	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,500	0.01	48	0.0	$3.31	$43.95	$0.00	13.30
4205	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4207	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4209	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4211	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4206	2	Compact Fluorescent: FT40DL	Wall Switch	40	3,500	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,500	0.02	97	0.0	$6.61	$87.91	$0.00	13.30
Hall	13	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	3,500	Relamp	Yes	13	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,450	0.23	1,281	0.0	$87.66	$1,542.78	$0.00	17.60
4180	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4182	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4184	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
4186	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4188	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4190	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
4192	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	3,500	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	3,500	0.01	70	0.0	$4.82	$35.90	$5.00	6.41
Men's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.10	439	0.0	$30.04	$485.40	$65.00	13.99
Men's Room	5	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.10	444	0.0	$30.39	$439.53	$35.00	13.31
Women's Room	14	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	14	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.23	1,024	0.0	$70.10	$772.60	$105.00	9.52
Women's Room	8	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.16	710	0.0	$48.62	$703.25	$35.00	13.74
Grand Stairs	12	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	12	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.14	896	0.0	$61.29	$1,054.87	$0.00	17.21
Grand Stairs	15	Compact Fluorescent: Twintube 3L Pin CFL	Wall Switch	78	4,160	Relamp	No	15	LED Screw-In Lamps: Plug-in LED (18W) 3L	Wall Switch	55	4,160	0.26	1,679	0.0	$114.91	$1,977.89	$0.00	17.21
Grand Stairs	6	Linear Fluorescent - T8: 2' T8 (17W) - 1L	Wall Switch	22	4,160	Relamp	No	6	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	9	4,160	0.06	388	0.0	$26.52	$191.40	$30.00	6.09
3F Stair Lounge	19	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	19	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.37	2,411	0.0	$164.96	$2,070.21	$0.00	12.55
3F Elevator Lobby	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.12	761	0.0	$52.09	$797.44	$35.00	14.64
3F Hall	15	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	15	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.27	1,757	0.0	$120.22	$1,718.59	$0.00	14.30
3F Hall	12	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	12	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.23	1,522	0.0	$104.19	$1,454.87	$0.00	13.96
3002	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3002	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3004	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3004	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3007	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3007	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
3006	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3006	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3008	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3008	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
3009	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3009	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
3010	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3010	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3012	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3012	3	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.03	104	0.0	$7.14	$131.86	$0.00	18.47
3011	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3011	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
3013	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3013	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
3030	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
3032	21	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	21	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.51	2,008	0.0	$137.44	$1,228.50	$210.00	7.41
3034	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3036	18	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	18	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.44	1,721	0.0	$117.80	$1,053.00	$180.00	7.41
3036	3	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.03	104	0.0	$7.14	$131.86	$0.00	18.47
Hall	22	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	22	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.40	2,576	0.0	$176.32	$2,733.93	$0.00	15.51
Hall	12	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	12	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.23	1,522	0.0	$104.19	$1,454.87	$0.00	13.96
3038	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
3023	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
3023	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
3023	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
3042	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.02	96	0.0	$6.54	$58.50	$10.00	7.41
3040	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.02	96	0.0	$6.54	$58.50	$10.00	7.41
3044	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.02	96	0.0	$6.54	$58.50	$10.00	7.41
3046	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
3046	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3048	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3048	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3050	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3050	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3051	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3051	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
3052	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3052	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
3054	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
3054	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
Women's Room	12	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.19	878	0.0	$60.09	$700.80	$95.00	10.08
Women's Room	5	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.10	444	0.0	$30.39	$439.53	$35.00	13.31
Hall	11	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	11	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.20	1,288	0.0	$88.16	$1,366.97	$0.00	15.51
Hall	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.12	761	0.0	$52.09	$727.44	$0.00	13.96
3120	1	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	1	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.01	43	0.0	$2.91	$43.95	$0.00	15.11
3122	1	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	1	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.01	43	0.0	$2.91	$43.95	$0.00	15.11
3124	4	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.04	170	0.0	$11.63	$175.81	$0.00	15.11
3126	2	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.02	85	0.0	$5.82	$87.91	$0.00	15.11
3128	5	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,156	0.08	361	0.0	$24.72	$489.77	$35.00	18.39
3119	6	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,156	0.09	434	0.0	$29.67	$533.72	$35.00	16.81
3119A	2	LED - Fixtures: Ambient - 2' - Direct Fixture	Wall Switch	26	3,080	None	No	2	LED - Fixtures: Ambient - 2' - Direct Fixture	Wall Switch	26	3,080	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
3117	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3115	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
Hall	11	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	11	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.20	1,288	0.0	$88.16	$1,766.97	$0.00	20.04

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
3113	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3111	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3109	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3107	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3105	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3103	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3101	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
Stair 5	4	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.05	299	0.0	$20.43	$351.62	$0.00	17.21
Stair 5	12	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	12	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.14	896	0.0	$61.29	$1,054.87	$0.00	17.21
3132	14	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	Yes	14	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,156	0.21	1,012	0.0	$69.23	$885.34	$35.00	12.28
3137	4	Compact Fluorescent: FT40DL - 3L	Wall Switch	120	3,080	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,156	0.18	867	0.0	$59.34	$797.44	$35.00	12.85
3137	11	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	3,080	Relamp	Yes	11	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,156	0.21	1,033	0.0	$70.71	$1,236.97	$35.00	17.00
3139	2	Compact Fluorescent: FT40DL - 3L	Wall Switch	120	3,080	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	2,156	0.09	434	0.0	$29.67	$533.72	$35.00	16.81
3139	8	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	3,080	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,156	0.16	751	0.0	$51.43	$973.25	$35.00	18.24
3135	2	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.02	85	0.0	$5.82	$87.91	$0.00	15.11
3134	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3141	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,156	0.09	443	0.0	$30.32	$420.40	$65.00	11.72
3143	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,156	0.09	443	0.0	$30.32	$420.40	$65.00	11.72
3145	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,156	0.09	443	0.0	$30.32	$420.40	$65.00	11.72
3147	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,156	0.09	443	0.0	$30.32	$420.40	$65.00	11.72
3161	2	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.02	85	0.0	$5.82	$87.91	$0.00	15.11
3162	23	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	Yes	23	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,156	0.35	1,662	0.0	$113.73	$1,280.92	$35.00	10.95
3163	2	Compact Fluorescent: FT40DL	Wall Switch	40	3,080	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	3,080	0.02	85	0.0	$5.82	$87.91	$0.00	15.11
3165	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3167	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
3169	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3171	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3177	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3175	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,156	0.18	886	0.0	$60.65	$621.00	$95.00	8.67
3177	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3179	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3181	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3183	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3185	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3187	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3189	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3151	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3150	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	3,080	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	3,080	0.02	117	0.0	$8.00	$58.50	$10.00	6.06
3152	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3154	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3156	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3158	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3190	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3192	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3194	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3196	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3198	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3200	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3202	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
Hall	13	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	13	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.23	1,522	0.0	$104.19	$1,542.78	$0.00	14.81

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Hall	3	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.06	381	0.0	$26.05	$463.72	$0.00	17.80
Men's Room	4	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.05	234	0.0	$16.04	$143.60	$20.00	7.70
Men's Room	2	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.02	104	0.0	$7.15	$175.81	$0.00	24.59
Women's Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.04	176	0.0	$12.03	$107.70	$15.00	7.70
Women's Room	2	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.02	104	0.0	$7.15	$175.81	$0.00	24.59
3211	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3213	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3215	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3231	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3233	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3235	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3237	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3239	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
3241	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	3,080	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	3,080	0.04	175	0.0	$12.00	$75.20	$15.00	5.02
Hall	13	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	13	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.23	1,522	0.0	$104.19	$1,542.78	$0.00	14.81
Men's Room	4	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,912	Relamp & Reballast	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.09	422	0.0	$28.88	$392.00	$20.00	12.88
Men's Room	4	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.05	209	0.0	$14.30	$351.62	$0.00	24.59
Women's Room	12	Linear Fluorescent - T12: 4' T12 (40W) - 1L	Occupancy Sensor	46	2,912	Relamp & Reballast	Yes	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.32	1,441	0.0	$98.59	$1,446.00	$95.00	13.70
Women's Room	8	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.16	710	0.0	$48.62	$703.25	$35.00	13.74
2F Main Stiar Lounge	16	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	16	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.31	2,030	0.0	$138.92	$1,806.50	$0.00	13.00
2F Elevator Lobby	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.12	761	0.0	$52.09	$797.44	$35.00	14.64
2F Hall	15	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	15	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.27	1,757	0.0	$120.22	$1,718.59	$0.00	14.30
2F Hall	13	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	13	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.25	1,649	0.0	$112.87	$1,542.78	$0.00	13.67
2002	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2002	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
2004	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2004	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
Men's Room	10	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	10	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.20	888	0.0	$60.78	$1,149.06	$35.00	18.33
Men's Room	14	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	14	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.23	1,024	0.0	$70.10	$502.60	$105.00	5.67
2005	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
2007	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2007	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
2006	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2006	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2008	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2008	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2009	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2009	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
2010	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2010	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2011	13	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	13	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.32	1,243	0.0	$85.08	$760.50	$130.00	7.41
2011	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
2012	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2012	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2013	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2013	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
2026	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2026	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2025	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2025	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
2024	2	Compact Fluorescent: FT40DL	Wall Switch	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
2021	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2021	4	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	139	0.0	$9.52	$175.81	$0.00	18.47
2033	2	Compact Fluorescent: FT40DL	Wall Switch	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
2032	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2032	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2031	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2031	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
Hall	18	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	18	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.32	2,108	0.0	$144.26	$2,182.31	$0.00	15.13
Hall	13	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	13	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.25	1,649	0.0	$112.87	$1,542.78	$0.00	13.67
2034 Com	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	4,160	0.02	158	0.0	$10.80	$58.50	$10.00	4.49
2036	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,520	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,520	0.02	96	0.0	$6.54	$58.50	$10.00	7.41
2040	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2040	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2042	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2042	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2044	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2044	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2046	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2046	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2048	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	62	2,520	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	2,520	0.29	1,148	0.0	$78.54	$702.00	$120.00	7.41
2048	5	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.04	174	0.0	$11.90	$219.77	$0.00	18.47
2045	2	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.02	70	0.0	$4.76	$87.91	$0.00	18.47
Women's Room	18	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	18	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.29	1,317	0.0	$90.13	$916.20	$125.00	8.78
Women's Room	8	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,912	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,038	0.12	547	0.0	$37.40	$351.62	$35.00	8.47

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
2103	9	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	9	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.08	313	0.0	$21.42	$395.58	$0.00	18.47
2103A1	1	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	1	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.01	35	0.0	$2.38	$43.95	$0.00	18.47
2105	14	Compact Fluorescent: FT40DL	Occupancy Sensor	40	2,520	Relamp	No	14	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	2,520	0.12	487	0.0	$33.32	$615.34	$0.00	18.47
Hall	24	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	24	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.43	2,811	0.0	$192.35	$2,909.74	$0.00	15.13
Hall	7	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	7	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.14	888	0.0	$60.78	$815.34	$0.00	13.42
2104	23	Compact Fluorescent: 3 Tube CF Pin	Wall Switch	36	2,800	Relamp	Yes	23	LED Screw-In Lamps: Plug-in LED (25W) 1L	Occupancy Sensor	25	1,960	0.31	1,360	0.0	$93.05	$1,280.92	$35.00	13.39
2104	3	Compact Fluorescent: 6L Chandelier	Wall Switch	156	2,800	Relamp	No	3	LED Screw-In Lamps: Screw-n LED (18W) 6L	Wall Switch	109	2,800	0.10	452	0.0	$30.94	$791.15	$0.00	25.57
2107	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2109	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2110	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2112	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2114	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2116	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2118	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.12	537	0.0	$36.76	$504.00	$75.00	11.67
2128	21	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	21	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.32	1,379	0.0	$94.40	$1,193.01	$35.00	12.27
2117	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2119	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2121	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2123	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2125	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2127	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2129	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2131	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2133	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2135	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
2137	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2139	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2140	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2142	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2144	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2146	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2148	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2149	6	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
2160	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.18	806	0.0	$55.13	$621.00	$95.00	9.54
2154	7	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	2,800	Relamp	Yes	7	LED Screw-In Lamps: Plug-in LED (11W) 2L	Occupancy Sensor	34	1,960	0.13	552	0.0	$37.76	$885.34	$35.00	22.52
2151	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2152	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2155	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2157	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2159	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2161	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2163	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2165	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2167	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2169	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
Men's Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	3	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.04	176	0.0	$12.03	$107.70	$15.00	7.70
Men's Room	2	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.02	104	0.0	$7.15	$175.81	$0.00	24.59
Women's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.08	352	0.0	$24.06	$215.40	$30.00	7.70
Women's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59
Hall	15	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	15	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.27	1,757	0.0	$120.22	$1,718.59	$0.00	14.30

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Hall	8	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.16	1,015	0.0	$69.46	$903.25	$0.00	13.00
2191	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2193	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2195	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2197	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2199	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
2201	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
Men's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.08	352	0.0	$24.06	$215.40	$30.00	7.70
Men's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59
Women's Room	12	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	12	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.19	878	0.0	$60.09	$700.80	$95.00	10.08
Women's Room	8	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.16	710	0.0	$48.62	$703.25	$35.00	13.74
2170	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2172	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2174	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2176	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2178	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2182	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
2173	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	1,960	0.14	604	0.0	$41.35	$495.60	$80.00	10.05
2179	1	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,800	Relamp	No	1	LED - Linear Tubes: (1) 4' Lamp	Wall Switch	15	2,800	0.01	56	0.0	$3.86	$35.90	$5.00	8.01
1F Elevator Lobby	8	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.16	1,015	0.0	$69.46	$973.25	$35.00	13.51
Lobby	10	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	10	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.20	1,269	0.0	$86.82	$1,149.06	$35.00	12.83
Hall	32	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	32	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.62	4,060	0.0	$277.83	$3,812.99	$0.00	13.72
Men's Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	No	6	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.08	352	0.0	$24.06	$215.40	$30.00	7.70
Men's Room	3	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.03	157	0.0	$10.73	$263.72	$0.00	24.59
Women's Room	14	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Occupancy Sensor	32	2,912	Relamp	Yes	14	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,038	0.23	1,024	0.0	$70.10	$772.60	$105.00	9.52

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Women's Room	5	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,038	0.10	444	0.0	$30.39	$439.53	$35.00	13.31
1105	26	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,800	Relamp	Yes	26	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,960	0.51	2,220	0.0	$151.94	$2,555.56	$35.00	16.59
1106	24	Compact Fluorescent: Twintube 1L Pin CFL	Wall Switch	26	2,800	Relamp	Yes	24	LED Screw-In Lamps: Plug-in LED (18W) 1L	Occupancy Sensor	18	1,960	0.23	1,025	0.0	$70.13	$1,324.87	$35.00	18.39
1106	3	Compact Fluorescent: 6L Chandelier	Wall Switch	156	2,800	Relamp	No	3	LED Screw-In Lamps: Screw-n LED (18W) 6L	Wall Switch	109	2,800	0.10	452	0.0	$30.94	$791.15	$0.00	25.57
Café Entry	4	Compact Fluorescent: FT40DL	Wall Switch	40	4,160	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	4,160	0.04	230	0.0	$15.71	$175.81	$0.00	11.19
Café Entry	1	Compact Fluorescent: Twintube 3L Pin CFL	Wall Switch	36	4,160	Relamp	No	1	LED Screw-In Lamps: Plug-in LED (8W) 3L	Wall Switch	25	4,160	0.01	52	0.0	$3.54	$131.86	$0.00	37.29
Café Entry	1	Linear Fluorescent - T8: 2' T8 (17W) - 1L	Wall Switch	22	4,160	Relamp	No	1	LED - Linear Tubes: (1) 2' Lamp	Wall Switch	9	4,160	0.01	65	0.0	$4.42	$31.90	$5.00	6.09
Vestibule	4	Compact Fluorescent: Twintube 1L Pin CFL	Wall Switch	24	4,160	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	4,160	0.02	138	0.0	$9.43	$175.81	$0.00	18.65
1107	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.02	106	0.0	$7.27	$58.50	$10.00	6.67
1108	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.02	106	0.0	$7.27	$58.50	$10.00	6.67
Hall	28	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	28	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.50	3,279	0.0	$224.40	$3,261.37	$0.00	14.53
Hall	4	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.08	507	0.0	$34.73	$551.62	$0.00	15.88
Hall	1	Compact Fluorescent: 6L Chandelier	Wall Switch	156	4,160	Relamp	No	1	LED Screw-In Lamps: Screw-n LED (18W) 6L	Wall Switch	109	4,160	0.03	224	0.0	$15.32	$263.72	$0.00	17.21
1122	12	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,800	Relamp	Yes	12	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,960	0.23	1,025	0.0	$70.13	$1,324.87	$35.00	18.39
1121	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.49	2,148	0.0	$147.02	$1,206.00	$195.00	6.88
1121	5	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.08	328	0.0	$22.48	$489.77	$35.00	20.23
1120	16	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	16	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.49	2,148	0.0	$147.02	$1,206.00	$195.00	6.88
1120	6	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
Hall	11	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	11	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.20	1,288	0.0	$88.16	$1,366.97	$0.00	15.51
1127	2	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.02	77	0.0	$5.29	$87.91	$0.00	16.62
1125	2	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.02	77	0.0	$5.29	$87.91	$0.00	16.62
1129	2	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.02	77	0.0	$5.29	$87.91	$0.00	16.62
1140	8	Compact Fluorescent: 6L Chandelier	Wall Switch	156	2,800	Relamp	No	8	LED Screw-In Lamps: Screw-n LED (18W) 6L	Wall Switch	109	2,800	0.28	1,206	0.0	$82.50	$2,109.74	$0.00	25.57
1140	10	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	10	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.15	657	0.0	$44.95	$709.53	$35.00	15.01
1140	40	Halogen Incandescent: 75W PAR38	Wall Switch	75	2,800	Relamp	Yes	40	LED Screw-In Lamps: Screw-in LED (53W)	Occupancy Sensor	53	1,960	1.13	4,927	0.0	$337.15	$4,576.12	$235.00	12.88

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
1140	2	Halogen Incandescent: 150W PAR38	Wall Switch	150	2,800	Relamp	Yes	2	LED Screw-In Lamps: Screw-in LED (105W)	Occupancy Sensor	105	1,960	0.11	493	0.0	$33.71	$485.31	$45.00	13.06
1141	2	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.02	77	0.0	$5.29	$87.91	$0.00	16.62
1134	4	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.04	155	0.0	$10.58	$175.81	$0.00	16.62
1131	3	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.03	116	0.0	$7.93	$131.86	$0.00	16.62
1143	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.37	1,611	0.0	$110.27	$972.00	$155.00	7.41
1143	5	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.08	328	0.0	$22.48	$489.77	$35.00	20.23
1145	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.37	1,611	0.0	$110.27	$972.00	$155.00	7.41
1145	5	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	5	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.08	328	0.0	$22.48	$489.77	$35.00	20.23
1142	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,960	0.37	1,611	0.0	$110.27	$972.00	$155.00	7.41
1142	3	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	No	3	LED Screw-In Lamps: Plug-in LED (28W) 1L	Wall Switch	28	2,800	0.03	116	0.0	$7.93	$131.86	$0.00	16.62
1144	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.05	213	0.0	$14.54	$117.00	$20.00	6.67
Hall	4	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.08	507	0.0	$34.73	$551.62	$0.00	15.88
Men's Room	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	None	No	4	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Men's Room	4	Linear Fluorescent - T12: 2' T12 (20W) - 1L	Occupancy Sensor	25	2,912	Relamp & Reballast	No	4	LED - Linear Tubes: (1) 2' Lamp	Occupancy Sensor	9	2,912	0.05	221	0.0	$15.13	$374.00	$20.00	23.40
Men's Room	4	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.05	209	0.0	$14.30	$351.62	$0.00	24.59
Women's Room	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	None	No	8	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	2,912	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Women's Room	6	Compact Fluorescent: Twintube 2L Pin CFL	Occupancy Sensor	52	2,912	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.07	313	0.0	$21.45	$527.44	$0.00	24.59
Hall	11	Compact Fluorescent: FT24DL - 2L	Wall Switch	48	4,160	Relamp	Yes	11	LED Screw-In Lamps: Plug-in LED (11W) 2L	High/Low Control	34	2,912	0.20	1,288	0.0	$88.16	$1,366.97	$0.00	15.51
1180	22	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	22	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.33	1,445	0.0	$98.90	$1,236.97	$35.00	12.15
1181	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
1183	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
1185	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
1187	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
1189	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
1190	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
1191	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
1193	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
1195	4	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.18	788	0.0	$53.94	$797.44	$35.00	14.13
1197	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
1199	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
1201	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,800	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,800	0.04	159	0.0	$10.91	$75.20	$15.00	5.52
1160	8	Compact Fluorescent: FT40DL	Wall Switch	40	2,800	Relamp	Yes	8	LED Screw-In Lamps: Plug-in LED (28W) 1L	Occupancy Sensor	28	1,960	0.12	526	0.0	$35.96	$621.62	$35.00	16.31
1162	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
1164	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,800	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	2,800	0.04	180	0.0	$12.34	$95.13	$20.00	6.09
1166	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,800	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	2,800	0.04	180	0.0	$12.34	$95.13	$20.00	6.09
1168	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,800	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	2,800	0.04	180	0.0	$12.34	$95.13	$20.00	6.09
1170	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	114	2,800	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	2,800	0.04	180	0.0	$12.34	$95.13	$20.00	6.09
1172	2	Compact Fluorescent: 3L FT40DL	Wall Switch	120	2,800	Relamp	Yes	2	LED Screw-In Lamps: Plug-in LED (28W) 3L	Occupancy Sensor	84	1,960	0.09	394	0.0	$26.97	$533.72	$35.00	18.49
1210	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.02	106	0.0	$7.27	$58.50	$10.00	6.67
1212	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.02	106	0.0	$7.27	$58.50	$10.00	6.67
1214	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,800	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,800	0.02	106	0.0	$7.27	$58.50	$10.00	6.67
Hall	15	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	15	LED Screw-In Lamps: Plug-in LED (18W) 2L	High/Low Control	36	2,912	0.29	1,903	0.0	$130.23	$1,718.59	$0.00	13.20
1070	62	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	62	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	1.90	6,660	0.0	$455.77	$3,897.00	$655.00	7.11
1070	32	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	32	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	3.16	11,066	0.0	$757.32	$3,714.90	$195.00	4.65
1070	10	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	10	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.20	683	0.0	$46.75	$1,149.06	$35.00	23.83
1070	30	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	Yes	30	LED Screw-In Lamps: Plug-in LED (17W) 1L	Occupancy Sensor	17	1,568	0.27	946	0.0	$64.73	$1,588.59	$35.00	24.00
1070	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1070	20	Halogen Incandescent: MR16	Wall Switch	50	2,240	Relamp	Yes	20	LED Screw-In Lamps: Screw-in LED (35W)	Occupancy Sensor	35	1,568	0.38	1,314	0.0	$89.91	$1,639.06	$135.00	16.73
1070	4	Metal Halide: (1) 100W Lamp	Wall Switch	128	2,240	Fixture Replacement	No	4	LED - Fixtures: Close to Ceiling Mount	Wall Switch	30	2,240	0.29	1,010	0.0	$69.10	$901.60	$40.00	12.47
1070 Entry	4	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	Yes	4	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	2,912	0.08	507	0.0	$34.73	$621.62	$35.00	16.89

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
1060 Entry	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
1060	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	0.18	645	0.0	$44.11	$621.00	$95.00	11.93
1060	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1060	16	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	16	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	1.58	5,533	0.0	$378.66	$1,992.45	$115.00	4.96
1060	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,240	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,568	0.11	394	0.0	$26.96	$251.30	$35.00	8.02
1060	6	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	2,240	0.03	111	0.0	$7.62	$263.72	$0.00	34.63
1060	4	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	2,240	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	2,240	0.02	80	0.0	$5.50	$175.81	$0.00	31.97
1050 Entry	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
1050	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	0.18	645	0.0	$44.11	$621.00	$95.00	11.93
1050	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1050	16	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	16	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	1.58	5,533	0.0	$378.66	$1,992.45	$115.00	4.96
1050	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,240	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,568	0.11	394	0.0	$26.96	$251.30	$35.00	8.02
1050	6	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	2,240	0.03	111	0.0	$7.62	$263.72	$0.00	34.63
1050	4	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	2,240	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	2,240	0.02	80	0.0	$5.50	$175.81	$0.00	31.97
1040 Entry	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
1040	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	0.18	645	0.0	$44.11	$621.00	$95.00	11.93
1040	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1040	16	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	16	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	1.58	5,533	0.0	$378.66	$1,992.45	$115.00	4.96
1040	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,240	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,568	0.11	394	0.0	$26.96	$251.30	$35.00	8.02
1040	6	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	2,240	0.03	111	0.0	$7.62	$263.72	$0.00	34.63
1040	4	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	2,240	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	2,240	0.02	80	0.0	$5.50	$175.81	$0.00	31.97
1030 Entry	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
1030	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	0.18	645	0.0	$44.11	$621.00	$95.00	11.93
1030	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1030	16	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	16	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	1.58	5,533	0.0	$378.66	$1,992.45	$115.00	4.96

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
1030	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,240	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,568	0.11	394	0.0	$26.96	$251.30	$35.00	8.02
1030	6	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	2,240	0.03	111	0.0	$7.62	$263.72	$0.00	34.63
1030	4	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	2,240	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	2,240	0.02	80	0.0	$5.50	$175.81	$0.00	31.97
1020 Entry	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
1020	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	0.18	645	0.0	$44.11	$621.00	$95.00	11.93
1020	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1020	16	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	16	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	1.58	5,533	0.0	$378.66	$1,992.45	$115.00	4.96
1020	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,240	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,568	0.11	394	0.0	$26.96	$251.30	$35.00	8.02
1020	6	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	2,240	0.03	111	0.0	$7.62	$263.72	$0.00	34.63
1020	4	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	2,240	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	2,240	0.02	80	0.0	$5.50	$175.81	$0.00	31.97
1010 Entry	2	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	4,160	Relamp	No	2	LED Screw-In Lamps: Plug-in LED (18W) 2L	Wall Switch	36	4,160	0.02	149	0.0	$10.21	$175.81	$0.00	17.21
1010	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,240	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	1,568	0.18	645	0.0	$44.11	$621.00	$95.00	11.93
1010	6	Compact Fluorescent: Twintube 2L Pin CFL	Wall Switch	52	2,240	Relamp	Yes	6	LED Screw-In Lamps: Plug-in LED (18W) 2L	Occupancy Sensor	36	1,568	0.12	410	0.0	$28.05	$797.44	$35.00	27.18
1010	16	Incandescent: 150W PAR38	Wall Switch	150	2,240	Relamp	Yes	16	LED Screw-In Lamps: Screw-in LED (23W)	Occupancy Sensor	23	1,568	1.58	5,533	0.0	$378.66	$1,992.45	$115.00	4.96
1010	7	Linear Fluorescent - T8: 4' T8 (32W) - 1L	Wall Switch	32	2,240	Relamp	Yes	7	LED - Linear Tubes: (1) 4' Lamp	Occupancy Sensor	15	1,568	0.11	394	0.0	$26.96	$251.30	$35.00	8.02
1010	6	Compact Fluorescent: Pin CFL	Wall Switch	24	2,240	Relamp	No	6	LED Screw-In Lamps: Plug-in LED (17W) 1L	Wall Switch	17	2,240	0.03	111	0.0	$7.62	$263.72	$0.00	34.63
1010	4	Compact Fluorescent: Twintube Pin CFL	Wall Switch	26	2,240	Relamp	No	4	LED Screw-In Lamps: Plug-in LED (18W) 1L	Wall Switch	18	2,240	0.02	80	0.0	$5.50	$175.81	$0.00	31.97
Basement Hall	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	4,160	Relamp	Yes	10	LED - Linear Tubes: (2) 4' Lamps	High/Low Control	29	2,912	0.31	1,995	0.0	$136.52	$985.00	$100.00	6.48
104	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.12	269	0.0	$18.38	$504.00	$75.00	23.34
106	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.12	269	0.0	$18.38	$504.00	$75.00	23.34
1F Elevator Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,400	0.05	106	0.0	$7.27	$117.00	$20.00	13.34
102	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.18	403	0.0	$27.57	$621.00	$95.00	19.08
200	88	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	88	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	2.70	5,908	0.0	$404.31	$5,418.00	$915.00	11.14
1131	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.09	201	0.0	$13.78	$445.50	$65.00	27.61
Electric Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	700	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	490	0.18	201	0.0	$13.78	$621.00	$95.00	38.16

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Building Perimiter	6	Metal Halide: (1) 250W Lamp	None	295	4,160	Fixture Replacement	Yes	6	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	75	2,080	1.14	7,391	0.0	$505.81	$2,844.06	$870.00	3.90
106	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	4	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.12	269	0.0	$18.38	$504.00	$75.00	23.34
1F Elevator Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	1,400	0.05	106	0.0	$7.27	$117.00	$20.00	13.34
102	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.18	403	0.0	$27.57	$621.00	$95.00	19.08
200	88	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	88	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	2.70	5,908	0.0	$404.31	$5,418.00	$915.00	11.14
1131	3	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	1,400	Relamp	Yes	3	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	980	0.09	201	0.0	$13.78	$445.50	$65.00	27.61
Electric Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	700	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	490	0.18	201	0.0	$13.78	$621.00	$95.00	38.16
Building Perimiter	6	Metal Halide: (1) 250W Lamp	None	295	4,160	Fixture Replacement	Yes	6	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	75	2,080	1.14	7,391	0.0	$505.81	$2,844.06	$870.00	3.90
Whole building	100	Exit Signs: LED - 2 W Lamp	None	6	8,760	None	No	100	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Motor Inventory & Recommendations

		Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Floors 5-7	1	Supply Fan	60.0	95.0%	Yes	3,000	No	95.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Floors 5-7	1	Return Fan	25.0	93.6%	Yes	3,000	No	93.6%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Floors 1-4 North	4	Supply Fan	50.0	94.5%	Yes	3,000	No	94.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Floors 1-4 South	4	Supply Fan	50.0	94.5%	Yes	3,000	No	94.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Floors 5-7	3	Exhaust Fan	5.0	89.5%	No	2,745	No	89.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Floors 1-4	4	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Floors 1-4	1	Exhaust Fan	1.0	85.5%	No	2,745	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Floors 1-4	1	Exhaust Fan	7.5	91.7%	No	3,391	No	91.7%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	IT Room	11	Supply Fan	1.0	82.0%	No	2,745	No	82.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Elevator Room	Whole Building	6	Other	50.0	94.5%	No	3,500	No	94.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Whole Building	3	Chilled Water Pump	25.0	94.1%	Yes	2,800	No	94.1%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Whole Building	1	Chilled Water Pump	25.0	93.6%	Yes	2,800	No	93.6%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	AHUs	4	Other	0.5	85.5%	No	2,000	No	85.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Whole Building	2	Heating Hot Water Pump	15.0	93.0%	Yes	2,000	No	93.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Whole Building	3	Water Supply Pump	2.0	78.5%	No	2,000	No	78.5%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof	Computer Rooms	1	Chilled Water Pump	40.0	93.6%	No	2,000	No	93.6%	Yes	1	4.81	27,736	0.0	$1,898.08	$9,366.05	$2,400.00	3.67
Roof	Computer Rooms	1	Chilled Water Pump	40.0	92.2%	No	2,000	No	92.2%	Yes	1	4.88	28,157	0.0	$1,926.90	$9,366.05	$2,400.00	3.62

Electric HVAC Inventory & Recommendations

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Computer Rooms	3	Packaged Terminal AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Computer Rooms	Computer Rooms	30	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Data Center	Data Center	4	Split-System AC	5.00		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Electric Chiller Inventory & Recommendations

		Existing Conditions			Proposed Conditions							Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Chiller Quantity	System Type	Cooling Capacity per Unit (Tons)	Install High Efficiency Chillers?	Chiller Quantity	System Type	Constant/ Variable Speed	Cooling Capacity (Tons)	Full Load Efficiency (kW/Ton)	IPLV Efficiency (kW/Ton)	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Central plant	Whole building	1	Water-Cooled Centrifugal Chiller	1,277.06	No							0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Demand Control Ventilation Recommendations

		Recommendation Inputs				Energy Impact & Financial Analysis					
Location	Area(s)/System(s) Affected	Number of Zones	Cooling Capacity of Controlled System (Tons)	Electric Heating Capacity of Controlled System (kBtu/hr)	Output Heating Capacity of Controlled System (MBh)	Total Annual Ton-Hr Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Building	Throughout Building	122	580.00		8,300.00	39,440	543.5	$21,193.92	$165,849.24	$0.00	7.83

Fuel Heating Inventory & Recommendations

		Existing Conditions			Proposed Conditions						Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Output Capacity per Unit (MBh)	Install High Efficiency System?	System Quantity	System Type	Output Capacity per Unit (MBh)	Heating Efficiency	Heating Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Mechnical room	Office	1	Furnace	56.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Central plant	Whole building	1	Forced Draft Steam Boiler	25,000.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

DHW Inventory & Recommendations

		Existing Conditions		Proposed Conditions						Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Replace?	System Quantity	System Type	Fuel Type	System Efficiency	Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	Kitchen	1	Storage Tank Water Heater (≤ 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Mech Room	Whole Building	1	Indirect System	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	Dishwasher	1	Booster Water Heater	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Commercial Refrigerator/Freezer Inventory & Recommendations

	Existing Conditions			Proposed Condi	Energy Impact & Financial Analysis						
Location	Quantity	Refrigerator/ Freezer Type	ENERGY STAR Qualified?	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	2	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Stand-Up Refrigerator, Solid Door (≤15 cu. ft.)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Offices	3	Stand-Up Refrigerator, Solid Door (≤15 cu. ft.)	No	Yes	0.10	869	0.0	$59.50	$3,360.00	$150.00	53.95
Kitchen	1	Stand-Up Refrigerator, Solid Door (16 - 30 cu. ft.)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nutrition Kitchen	1	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nutrition Kitchen	1	Stand-Up Freezer, Solid Door (31 - 50 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nutrition Kitchen	2	Stand-Up Refrigerator, Solid Door (16 - 30 cu. ft.)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Nutrition Kitchen	1	Stand-Up Refrigerator, Solid Door (16 - 30 cu. ft.)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Commercial Ice Maker Inventory & Recommendations

	Existing Conditions			Proposed Condi	Energy Impact & Financial Analysis						
Location	Quantity	Ice Maker Type	ENERGY STAR Qualified?	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Self-Contained Unit (<175 lbs/day), Continuous	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Self-Contained Unit (<175 lbs/day), Continuous	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Cooking Equipment Inventory & Recommendations

	Existing Conditions			Proposed Conditions	Energy Impact & Financial Analysis						
Location	Quantity	Equipment Type	High Efficiency Equipement?	Install High Efficiency Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Kitchen	1	Gas Convection Oven (Half Size)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Combination Oven/Steam Cooker (<15 Pans)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Steamer	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Rack Oven (Double)	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	2	Gas Rack Oven (Single)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	2	Insulated Food Holding Cabinet (Full Size)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Electric Combination Oven/Steam Cooker (<15 Pans)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Electric Convection Oven (Half Size)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Rack Oven (Single)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Electric Griddle (≤2 Feet Width)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Fryer	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Gas Rack Oven (Double)	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Kitchen	1	Electric Steamer	No	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Dishwasher Inventory & Recommendations

	Existing Conditions					Proposed Conditions	Energy Impact & Financial Analysis						
Location	Quantity	Dishwasher Type	Water Heater Fuel Type	Booster Heater Fuel Type	ENERGY STAR Qualified?	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Payback w/ Incentives in Years
Kitchen	1	Single Tank Conveyor (Low Temp)	Electric	N/A	Yes	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Plug Load Inventory

	Existing Conditions			
Location	Quantity	Equipment Description	Energy Rate (W)	ENERGY STAR Qualified?
Kitchen	1	Stand Mixer	500.0	No
Nutrition Kitchen	1	Washer	500.0	Yes
Nutrition Kitchen	1	Dryer	1,500.0	No
Nutrition Kitchen	1	Electric Coffee Urn	5,300.0	No
Laundry	1	Washer	500.0	No
Laundry	1	Dryer	1,500.0	No
Building Wide	128	PC	75.0	No
Building Wide	128	LCD	35.0	No
Data center	1	Servers	41,364.7	No

APPENDIX B: ENERGY STAR® STATEMENT OF ENERGY PERFORMANCE

ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

N/A

ENERGY STAR® Score[1]

Montclair State University Campus (Buildings 1-41)

Primary Property Type: College/University
Gross Floor Area (ft²): 2,925,896
Built: 1908

For Year Ending: October 31, 2016
Date Generated: October 10, 2017

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

Property & Contact Information

Property Address	Property Owner	Primary Contact
Montclair State University Campus (Buildings 1-41) 1 Normal Avenue Montclair, New Jersey 07043	Montclair Statet University 1 Normal Avenue Montclair, NJ 07043 973-655-3244	Ana Pinto 1 Normal Avenue Montclair, NJ 07043 973-655-3244 pintoa@montclair.edu

Property ID: 6069294

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
172.3 kBtu/ft²

Source EUI
306.4 kBtu/ft²

Annual Energy by Fuel

District Chilled Water -	81,507,530 (16%)
Other (kBtu)	
District Steam (kBtu)	223,798,259 (44%)
Electric - Grid (kBtu)	161,334,839 (32%)
Natural Gas (kBtu)	37,406,141 (7%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	147.6
National Median Source EUI (kBtu/ft²)	262.6
% Diff from National Median Source EUI	17%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	N/A

Signature & Stamp of Verifying Professional

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

Signature: _____ Date: _____

Licensed Professional

___ _____
,
(___)___-____
_____

Professional Engineer Stamp
(if applicable)