



Local Government Energy Audit Report

HMH Southern Ocean Medical Center

June 21, 2019

Prepared for:

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Disclaimer

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

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

TRC bases estimated installation costs on our experience at similar facilities, pricing from local contractors and vendors, and/or cost estimates from RS Means. We encourage the owner of the facility is encouraged to independently confirm these cost estimates and to obtain multiple estimates when considering measure installations. Actual installation costs can vary widely based on individual measures and conditions. TRC and NJBPU do not guarantee installed cost estimates and shall in no event be held liable should actual installed costs vary from estimates.

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. Please review all available program incentives and eligibility requirements prior to selecting and installing any energy conservation measures.

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

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Table of Contents

1	Executive Summary.....	1
1.1	Planning Your Project	5
	Pick Your Installation Approach	5
	More Options from Around the State	7
2	Existing Conditions.....	8
2.1	Site Overview.....	8
2.2	Building Occupancy	8
2.3	Building Envelope	9
2.4	Lighting Systems.....	11
2.5	Air Handling Systems.....	13
	Direct Expansion Air Conditioning System (DX)	13
2.6	Exhaust Air Systems.....	19
2.7	Heating Steam Systems.....	19
2.8	Heating Hot Water Systems	22
2.9	Chilled Water Systems.....	23
2.10	Medical Vacuum Compressed Air Systems	26
2.11	Building Automation Systems (BAS).....	27
2.12	Domestic Hot Water	28
2.13	Food Service Equipment.....	30
2.14	Refrigeration.....	30
2.15	Plug Load & Vending Machines.....	32
2.16	Water-Using Systems	33
2.17	On-Site Generation.....	33
3	Energy Use and Costs	34
3.1	Electricity.....	36
3.2	Natural Gas.....	37
3.3	Benchmarking.....	38
	Tracking Your Energy Performance	39
4	Energy Conservation Measures	40
4.1	Lighting	43
	ECM 1: Install LED Fixtures	43
	ECM 2: Retrofit Fixtures with LED Lamps.....	43
4.2	Lighting Controls.....	44
	ECM 3: Install Occupancy Sensor Lighting Controls	44
4.3	Motors.....	45
	ECM 4: Premium Efficiency Motors	45
4.4	Variable Frequency Drives (VFD).....	48

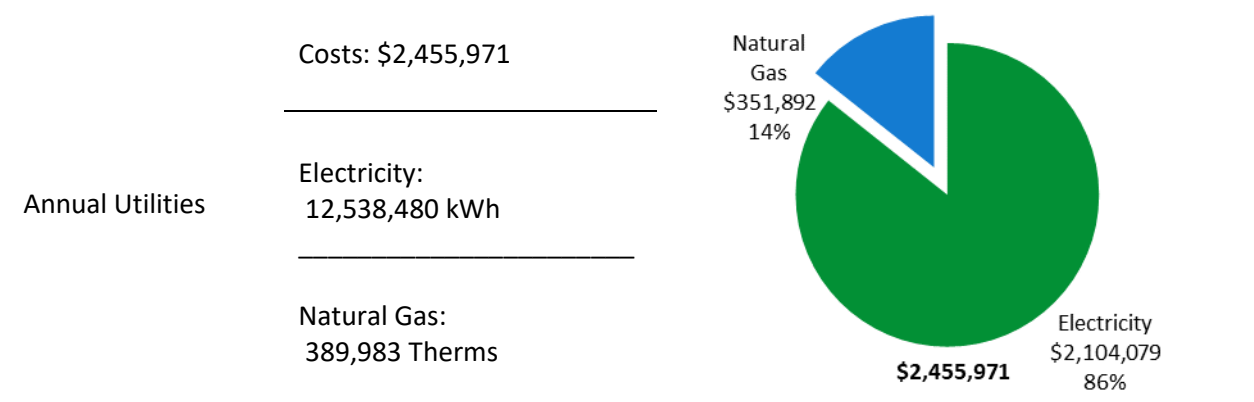
ECM 5: Install VFDs on Constant Volume (CV) Fans	48
ECM 6: Install VFDs on Chilled Water Pumps.....	49
ECM 7: Install VFDs on Heating Water Pumps	49
ECM 8: Install VFDs on Boiler Feedwater Pumps	49
ECM 9: Install VFDs on Kitchen Hood Fan Motors	49
4.5 Electric Unitary HVAC	50
Install High Efficiency Air Conditioning Units	50
Install High Efficiency Heat Pumps	50
4.6 Electric Chillers	51
ECM 10: Install High Efficiency Chillers	51
4.7 Gas-Fired Heating.....	52
ECM 11: Install High Efficiency Steam Boilers	52
ECM 12: Install High Efficiency Furnaces.....	52
4.8 HVAC.....	53
ECM 13: Implement Demand Control Ventilation (DCV)	53
ECM 14: Install Pipe Insulation.....	53
4.9 Food Service & Refrigeration Measures.....	54
ECM 15: Refrigerator/Freezer Case Electrically Commutated Motors	54
ECM 16: Refrigeration Controls.....	54
ECM 17: Vending Machine Control	54
5 Energy Efficient Best Practices	55
Energy Tracking with ENERGY STAR® Portfolio Manager®	55
Weatherization.....	55
Doors and Windows	55
Lighting Controls	55
Motor Controls.....	55
Motor Short Cycling Reduction	56
Motor Maintenance	56
Fans to Reduce Cooling Load	56
Thermostat Schedules and Temperature Resets	56
Economizer Maintenance	56
Chiller Maintenance	56
AC System Evaporator/Condenser Coil Cleaning	57
HVAC Filter Cleaning and Replacement	57
Duct Sealing.....	57
Furnace Maintenance	57
Water Heater Maintenance	57
Compressed Air System Maintenance	58
Water Conservation	58
Procurement Strategies	58
6 On-site Generation	59
6.1 Solar Photovoltaic	59
6.2 Combined Heat and Power	61
7 Project Funding and Incentives.....	62
7.1 SmartStart	63

7.2	Direct Install	64
7.3	Pay for Performance - Existing Buildings.....	65
7.4	Combined Heat and Power	66
7.5	Energy Savings Improvement Program	67
7.6	SREC Registration Program.....	68
8	Energy Purchasing and Procurement Strategies	69
8.1	Retail Electric Supply Options.....	69
Appendix A: Equipment Inventory & Recommendations		A-1
Appendix B: ENERGY STAR® Statement of Energy Performance		B-1
Appendix C: Glossary		C-1

1 EXECUTIVE SUMMARY

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

BUILDING PERFORMANCE REPORT



ENERGY STAR® Benchmarking Score	<p>77 <i>(1-100 scale)</i></p>	<p>Congratulations, your building performs better than the national average. This report has suggestions about how to keep your building running efficiently, further improve performance and lower your energy bills even more.</p>
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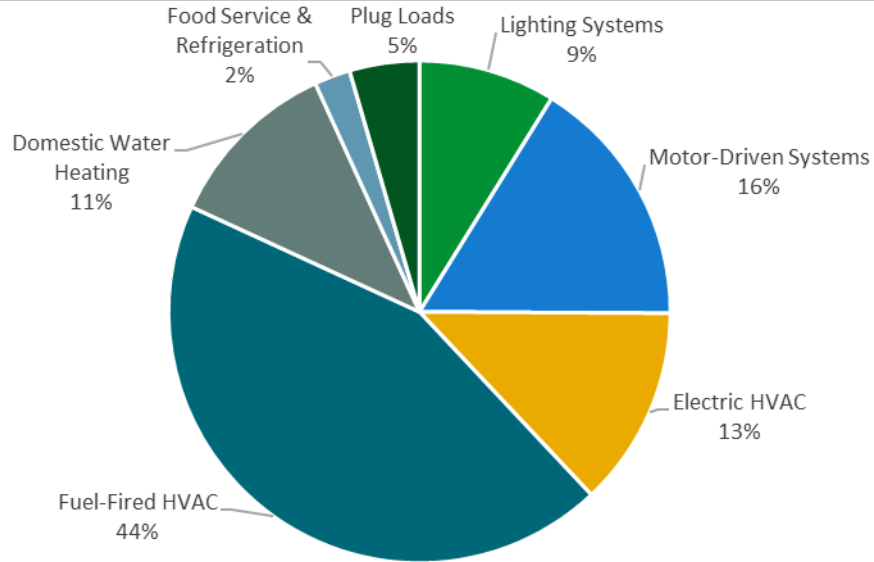


Figure 1 - Energy Use by System

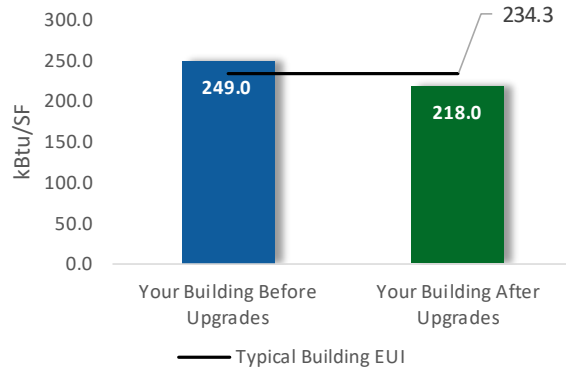
POTENTIAL IMPROVEMENTS



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

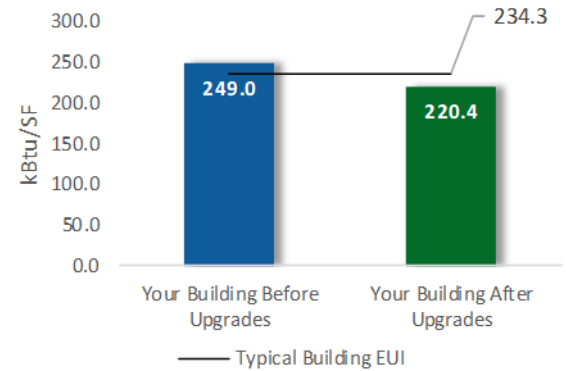
Scenario 1: Full Package (all evaluated measures)

Installation Cost	\$1,952,837
Potential Rebates & Incentives ¹	\$84,978
Annual Cost Savings	\$397,362
Annual Energy Savings	Electricity: 2,231,120 kWh Natural Gas: 25,443 Therms
Greenhouse Gas Emission Savings	1,272 Tons
Simple Payback	4.7 Years
Site Energy Savings (all utilities)	12%



Scenario 2: Cost Effective Package²

Installation Cost	\$1,111,242
Potential Rebates & Incentives	\$78,697
Annual Cost Savings	\$359,894
Annual Energy Savings	Electricity: 2,007,842 kWh Natural Gas: 25,443 Therms
Greenhouse Gas Emission Savings	1,160 Tons
Simple Payback	2.9 Years
Site Energy Savings (all utilities)	11%



On-site Generation Potential

Photovoltaic	High
Combined Heat and Power	High

¹ Incentives are based on current SmartStart Prescriptive incentives. Other Program incentives may apply.

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

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Lifetime Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		818,042	96.0	-172	\$135,725	\$2,035,871	\$131,652	\$19,727	\$111,925	0.8	803,640
ECM 1	Install LED Fixtures	1,793	0.3	0	\$301	\$4,514	\$2,898	\$300	\$2,598	8.6	1,806
ECM 2	Retrofit Fixtures with LED Lamps	816,249	95.7	-172	\$135,424	\$2,031,357	\$128,754	\$19,427	\$109,327	0.8	801,834
Lighting Control Measures		11,609	1.3	-2	\$1,926	\$15,406	\$6,210	\$455	\$5,755	3.0	11,400
ECM 3	Install Occupancy Sensor Lighting Controls	11,609	1.3	-2	\$1,926	\$15,406	\$6,210	\$455	\$5,755	3.0	11,400
Motor Upgrades		115,662	23.2	0	\$19,409	\$291,139	\$165,948	\$0	\$165,948	8.5	116,471
ECM 4	Premium Efficiency Motors	115,662	23.2	0	\$19,409	\$291,139	\$165,948	\$0	\$165,948	8.5	116,471
Variable Frequency Drive (VFD) Measures		728,324	139.6	200	\$124,022	\$1,860,331	\$258,318	\$35,380	\$222,938	1.8	756,803
ECM 5	Install VFDs on Constant Volume (CV) Fans	415,287	94.3	0	\$69,689	\$1,045,339	\$145,039	\$26,080	\$118,959	1.7	418,191
ECM 6	Install VFDs on Chilled Water Pumps	119,944	19.0	0	\$20,128	\$301,916	\$37,088	\$4,800	\$32,288	1.6	120,782
ECM 7	Install VFDs on Heating Water Pumps	143,681	11.4	0	\$24,111	\$361,667	\$61,759	\$0	\$61,759	2.6	144,686
ECM 8	Install VFDs on Boiler Feedwater Pumps	33,285	14.9	0	\$5,586	\$83,784	\$11,424	\$3,600	\$7,824	1.4	33,518
ECM 9	Install VFDs on Kitchen Hood Fan Motors	16,126	0.0	200	\$4,508	\$67,625	\$3,008	\$900	\$2,108	0.5	39,625
Electric Unitary HVAC Measures		223,278	56.0	0	\$37,468	\$562,024	\$841,595	\$6,281	\$835,314	22.3	224,840
	Install High Efficiency Air Conditioning Units	148,887	52.3	0	\$24,985	\$374,771	\$470,943	\$2,527	\$468,416	18.7	149,928
	Install High Efficiency Heat Pumps	74,391	3.7	0	\$12,484	\$187,253	\$370,651	\$3,754	\$366,898	29.4	74,911
Electric Chiller Replacement		290,012	136.5	0	\$48,667	\$973,336	\$236,334	\$21,600	\$214,734	4.4	292,040
ECM 10	Install High Efficiency Chillers	290,012	136.5	0	\$48,667	\$973,336	\$236,334	\$21,600	\$214,734	4.4	292,040
Gas Heating (HVAC/Process) Replacement		0	0.0	2,279	\$20,567	\$411,334	\$295,840	\$800	\$295,040	14.3	266,877
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,188	\$19,741	\$394,818	\$286,777	\$0	\$286,777	14.5	256,161
ECM 12	Install High Efficiency Furnaces	0	0.0	92	\$826	\$16,515	\$9,063	\$800	\$8,263	10.0	10,715
HVAC System Improvements		9,074	0.0	240	\$3,685	\$54,217	\$7,017	\$0	\$7,017	1.9	37,194
ECM 13	Implement Demand Control Ventilation (DCV)	9,074	0.0	210	\$3,421	\$51,314	\$6,797	\$0	\$6,797	2.0	33,769
ECM 14	Install Pipe Insulation	0	0.0	29	\$264	\$2,903	\$220	\$0	\$220	0.8	3,425
Food Service & Refrigeration Measures		35,120	3.1	0	\$5,893	\$80,033	\$9,924	\$735	\$9,189	1.6	35,365
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	14,068	1.7	0	\$2,361	\$35,410	\$2,426	\$160	\$2,266	1.0	14,166
ECM 16	Refrigeration Controls	14,605	0.6	0	\$2,451	\$39,214	\$6,578	\$375	\$6,203	2.5	14,707
ECM 17	Vending Machine Control	6,447	0.7	0	\$1,082	\$5,410	\$920	\$200	\$720	0.7	6,492
TOTALS		2,231,120	455.7	2,544	\$397,362	\$6,283,691	\$1,952,837	\$84,978	\$1,867,860	4.7	2,544,629

* - All incentives presented in this table are based on NJ SmartStart 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).

Figure 2 – Evaluated Energy Improvements

1.1 Planning Your Project

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

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

Pick Your Installation Approach

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

The potential ECMs identified for this building likely qualify for multiple incentive and funding programs. Based on current program rules and requirements, your measures are likely to qualify for the following programs:

Energy Conservation Measure		SmartStart	Direct Install	Pay For Performance
ECM 1	Install LED Fixtures	X		X
ECM 2	Retrofit Fixtures with LED Lamps	X		X
ECM 3	Install Occupancy Sensor Lighting Controls	X		X
ECM 4	Premium Efficiency Motors			X
ECM 5	Install VFDs on Constant Volume (CV) HVAC	X		X
ECM 6	Install VFDs on Chilled Water Pumps	X		X
ECM 7	Install VFDs on Hot Water Pumps			X
ECM 8	Install VFDs on Boiler Feedwater Pumps	X		X
ECM 9	Install VFDs on Single-Speed Kitchen Hoods	X		X
ECM 10	Install High Efficiency Chillers	X		X
ECM 11	Install High Efficiency Steam Boilers			X
ECM 12	Install High Efficiency Furnaces	X		X
ECM 13	Implement Demand Control Ventilation			X
ECM 14	Install Pipe Insulation	X		X
ECM 15	Refrigerator/Freezer Case Electrically Commutated	X		X
ECM 16	Refrigeration Controls	X		X
ECM 17	Vending Machine Control	X		X

Figure 3 – Funding Options



New Jersey's Clean Energy Programs At-A-Glance

	SmartStart Flexibility to install at your own pace	Direct Install Turnkey installation	Pay for Performance Whole building upgrades
Who should use it?	Buildings installing individual measures or small group of measures.	Small to mid-size facilities that can bundle multiple measures together. Average peak demand should be below 200 kW. Not suitable for significant building shell issues.	Mid to large size facilities looking to implement as many measures as possible at one time. Peak demand should be over 200 kW.
How does it work?	Use in-house staff or your preferred contractor.	Pre-approved contractors pass savings along to you via reduced material and labor costs.	Whole-building approach to energy upgrades designed to reduce energy use by at least 15%. The more you save, the higher the incentives.
What are the Incentives?	Fixed incentives for specific energy efficiency measures.	Incentives pay up to 70% of eligible costs, up to \$125,000 per project. You pay the remaining 30% directly to the contractor.	Up to 25% of installation cost, calculated based on level of energy savings per square foot.
How do I participate?	Submit an application for the specific equipment to be installed.	Contact a participating contractor in your region.	Contact a pre-qualified partner to develop your energy reduction plan and set your energy savings targets.

Take the next step by visiting www.njcleanenergy.com for program details, applications, and to contact a qualified contractor.

Individual Measures with SmartStart

For facilities wishing to pursue only selected individual measures (or planning to phase implementation of selected measures over multiple years), incentives are available through the SmartStart program. To participate, you can use internal resources or an outside firm or contractor to perform the final design of the ECM(s) and install the equipment. Program pre-approval is required for some SmartStart incentives, so only after receiving pre-approval should you proceed with ECM installation.

Turnkey Installation with Direct Install

The Direct Install program provides turnkey installation of multiple measures through an authorized network of participating contractors. This program can provide substantially higher incentives than SmartStart, up to 70% of the cost of selected measures. Direct Install contractors will assess and verify individual measure eligibility and, in most cases, they perform the installation work. The Direct Install program is available to sites with an average peak demand of less than 200 kW.

Whole Building Approach with Pay for Performance

Pay for Performance can be a good option for medium to large sized facilities to achieve deep energy savings. Pay for Performance allows you to install as many measures as possible under a single project as well as address measures that may not qualify for other programs. Many facilities pursuing an Energy Savings Improvement Program loan also use this program. Pay for Performance works for larger customers with a peak demand over 200 kW. 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.

More Options from Around the State

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

For larger facilities with limited capital availability to implement ECMs, project financing may be available through the ESIP. Supported directly by the NJBPU, ESIP provides government agencies with project development, design, and implementation support services, as well as, attractive financing for implementing ECMs. You have already taken the first step as an LGEA customer, because this report is required to participate in ESIP.

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

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

Ongoing Electric Savings with Demand Response

The Demand Response Energy Aggregator program reduces electric loads at commercial facilities when wholesale electricity prices are high or when the reliability of the electric grid is threatened due to peak power demand. By enabling commercial facilities to reduce their electric demand during times of peak demand, the grid is made more reliable and overall transmission costs are reduced for all ratepayers. Curtailment service providers provide regular payments to medium and large consumers of electric power for their participation in demand response (DR) programs. Program participation is voluntary, and facilities receive payments regardless of whether they are called upon to curtail their load during times of peak demand.

2 EXISTING CONDITIONS

The New Jersey Board of Public Utilities (NJBP) has sponsored this Local Government Energy Audit (LGEA) Report for Hackensack Meridian Health Southern Ocean Medical Center. This report provides information on how your facility uses energy, identifies energy conservation measures (ECMs) that can reduce your energy use, and provides information and assistance to help you implement the ECMs. This report also contains valuable information on financial incentives from New Jersey’s Clean Energy Program (NJCEP) for implementing ECMs.

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

2.1 Site Overview

On December 4, 2018, TRC performed an energy audit at Hackensack Meridian Health Southern Ocean Medical Center located in Manahawkin, New Jersey. TRC met with Ramon Pressburger to review the facility operations and help focus our investigation on specific energy-using systems.

HMH Southern Ocean Medical Center is a 328,478 square feet hospital complex located in 1140 West Route 72 Manahawkin NJ. It was original built in 1972 and expanded to accommodate additional spaces through 1980. The 174 bed hospital is made up of three and four story towers (including basement). The single floor hospital main areas are connected by hallways. Areas include surgery and intensive care unities where common and advanced medical care needs are attended to.

Lighting was partially upgraded to LEDs in 2016, but more opportunities exist. Some major HVAC equipment (AHUs, RTUs, chillers, boilers, pumps) have passed their useful life and are due for an upgrade. The facility uses steam supplied from two boilers. The hospital has three diesel generators to provide emergency backup electricity. There are eight passenger and freight elevators in the facility. Facility concerns are roof leakage and poor vapor barrier in some areas of the walls.

2.2 Building Occupancy

The hospital operates 24 hours a day, seven days a week, year-round. The offices however, operate Monday to Friday from 8:30 AM to 4:30 PM.

Building Name	Weekday/Weekend	Operating Schedule
HMH Southern Ocean Medical Center	Weekday	12:00 AM - 12:00 AM
	Weekend	12:00 AM - 12:00 AM

Figure 4 - Building Occupancy Schedule

2.3 Building Envelope

The facility includes three towers and the single floor main area, all connected by hallways. The three towers are the Medical Arts Pavilion (MAP), Patient Tower, and Mancini Pavilion. The single floor main area includes spaces such as the emergency department, registration, operating rooms, receiving area, sterilization, and maintenance shop.

Building walls are concrete block over structural steel. Poor vapor barriers were observed in some areas of the walls. They are meant to resist diffusion of moisture through the walls. The facility has flat roofs covered with a thermoplastic white membrane. Site staff report leaks in some areas of the roof such as the Patient Tower, main area, and the oncology department. The remaining roof sections are in good condition.

The windows are double glazed and have aluminum frames with thermal break fiberglass. The main hospital and emergency entry have windows that are part of an aluminum-frames storefront system incorporating the entry doors. The entrance doors are fully glazed, and aluminum framed set in the storefront framing system. The exit doors are made of metal frames and are in good condition. Windows, shading devices, sills, related flashing, and caulking were inspected (as accessibility allowed) for signs of moisture, air leakage, and other issues. Overall, the windows were found to be in good condition with little signs of uncontrolled moisture, air leakage, and other energy-compromising issues.



Image 1: Flat Roof & the Towers



Image 2: MAP & Mancini Pavilion



Image 3: Patient Tower & Emergency Area

2.4 Lighting Systems

Interior and exterior lighting systems were partially upgraded at the facility in 2016, but more opportunities exist. The primary interior lighting system uses energy efficient LED recessed troffers as well as linear fluorescent T5 and 32-Watt T8 lamps. There are also some compact fluorescent lamps (CFL) in recessed cans throughout the facility. The linear fluorescent fixtures use electronic ballasts. The recessed troffer LED fixtures are either 28-Watt, 36-Watt and 60-Watt. The LED fixtures along with the recessed can CFL lamps are found in many spaces throughout the facility except the mechanical spaces, some storage and closet spaces, where 32-Watt linear fluorescent T8 lamps are used. The facility hallways are illuminated with a combination of LED, T8, and CFL fixtures. The linear fluorescent T5 fixtures are found in main areas such as the Emergency Department part A and B. Interior lighting fixtures are in good condition and lighting levels were generally sufficient. Exit signs throughout the facility are LED fixtures. Lighting fixtures in spaces are mainly controlled by manual wall switches except for some restrooms and storage spaces, which use wall mounted occupancy sensors. Lighting in many spaces such as hallways and the critical care unit are on 24 hours a day.

Exterior illumination is mainly provided by LED pole mounted walkway and parking lot fixtures, as well as wall and ground mounted fixtures containing approximately 9-Watt, 35-Watt, 75-Watt and 200-Watt bulbs. There are some 90-Watt halogen incandescent flood lights, a 100-Watt high pressure sodium (loading dock), and linear fluorescent T8 lamps (emergency bay area) are also used. Exterior light fixtures are controlled by both time clock and photocells.

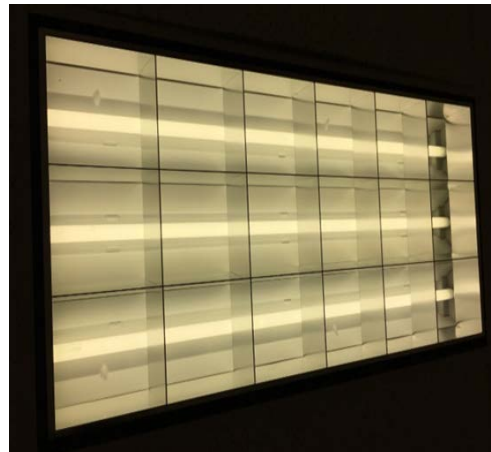


Image 4: Typical Recessed LED & T8 Fixtures



Image 3: Typical Recessed Can CFL Lamps & Exit Sign



Image 6: Hallway Canopy (CFL) & Recessed LED Fixture



Image 7: Exterior LED Fixtures



Image 8: Wall Mounted Occupancy Sensor & Timer

2.5 Air Handling Systems

Direct Expansion Air Conditioning System (DX)

The direct expansion (DX) system for the facility consists of split systems, heat pumps, and rooftop packaged units (RTUs). The system consists of new and old equipment. It is comprised of 25 split systems ranging from 1.5 ton to 80 ton and 19 packaged units ranging from 3 ton to 60 ton. The range in efficiency of the units depends on the age and condition. Some units provide heat (heat pumps) as well. They utilize a scroll compressor and a DX coil with outside air economizer (on some units) to provide free cooling when outside air temperature is lower than the return air temperature in cooling mode. The big RTUs are controlled by the building automation system, while the small and split system units are controlled with programmable thermostats. The laboratory has a 40-ton Trane DX packaged unit with a 400 MBh output gas fired furnace and outside air economizer.

Refer to Appendix A for detailed information about each unit.



Image 9: Laboratory & Maternity RTUs



Image 10: Medical Arts Pavilion (1st ,2nd, 3rd Floor) & MRI



Image 4: Radiology & Endo RTUs



Image 5: Split System AC & Programmable Thermostat

Air Distribution System

a) Mancini Pavilion Air Handler Units (AHUs):

The Mancini Pavilion’s air distribution is comprised of eight indoor multizone AHUs located in the mechanical room, fourth floor mechanical room and room 1349. AHUs 1, 2 and 3 are constant air volume while AHUs 4, 5, 6, 7 and 8 are variable air volume. The AHUs are equipped with hot water coil for heating and a chilled water coil for cooling. Air distribution is provided to supply air registers by ducts concealed above the ceilings. Heated and cooled air is distributed through ducts to fan powered variable air volume (VAV) terminals concealed above the ceilings. The units are controlled with the building automation system (BAS). They appear in good condition. Refer to the table below for the areas served by each unit.

Air Handler Unit (AHUs) Number	Areas Served	VFD Control
AHU#1	Lower Level	NO
AHU#2	Room 103	NO
AHU#3	Dining Area	NO
AHU#4	Serves Administration Area	YES
AHU#5	2 nd Floor Pharmacy	YES
AHU#6	2 nd Floor TCU	YES
AHU#7	3 rd Floor CCU	YES
AHU#8	4 th Floor Area	YES

Refer to Appendix A for detailed information about each unit.



Image 6: Typical Constant Air Volume Unit with Return Air Fan Motor



Image 7: Typical Variable Air Volume Unit with VFD Control



Image 8: Supply & Return Air Fan Motors

b) Patient Tower Air Handler Units (AHUs).

Patient Tower's air distribution system consists of three multizone zone constant volume air handler units. They are equipped with hot water coil for heating. Only AHU2 has a chilled water coil for cooling. The rest of the AHUs do not provide cooling. Air distribution is provided to supply air registers by ducts concealed above the ceilings. AHU1 serves the operating rooms, AHU2 serves the same day surgery and waiting area, and AHU3 provides constant air volume to the Sterile Processing Department and surgery rooms. The units are controlled with the building automation system (BAS). They appear in fair condition. They have passed their useful life and should be considered for replacement.



Image 9: AHU 2 & 3

c) Emergency Department (ED) Air Handler Units (AHUs).

The ED air distribution system is comprised of two outdoor multizone York air handlers (AHU1, AHU2). Each unit has a dedicated chiller that supplies chilled water for space cooling. They are also equipped with a hot water coil for heating. The units are located on the roof and provide variable air volume with a 50 hp (AHU1), 40 hp (AHU2) supply fan and 15 hp (AHU1), 25 hp (AHU2) return fan. They are also equipped with an economizer system to provide the first stage of cooling whenever the outdoor air temperature and humidity are appropriate to meet the internal cooling demand.



Image 10: ED York AHUs

The hospital operating staff has a guideline for temperature setpoint throughout the year. They constantly maintained air temperature between 70 and 75 degrees.

2.6 Exhaust Air Systems

Air is exhausted from the bathrooms, hallways, dining areas, kitchen, cafeteria, elevator room, storage areas, laboratories, and many critical care unit areas through the roof exhausters. Most of the exhaust fans serving critical areas of the facility operate 24/7. Most of the units are controlled with the building automation system.



Image 11: Roof Mounted Exhaust Fans

2.7 Heating Steam Systems

Two Clever Brook 8,368 MBh steam boilers serve the building heating load, partial domestic hot water needs, and process steam equipment. The burners are non-modulating and are estimated to be operating between 78-80% combustion efficiencies. The boilers are configured in an automated lead-lag control scheme and appear in the building automation system for monitoring purposes only. The facility has two 3 hp and one 5 hp compressors that are used to provide pneumatic control system. Each boiler has a 7.5 hp combustion air fan. There are three 10 hp constant speed boiler feed water pumps in the boiler room and 12 condensate pumps ranging from 0.3 hp to 2 hp. Installed in 1994, the boilers have reached their useful life and there is significant opportunity for energy savings as described in ECM11 of this report. The steam production system has a dedicated maintenance staff in place. Heating and the process steam equipment, such as steam sterilizers and steam humidifiers, cause the boilers to run year-round.

Process Steam Equipment

The facility has three process steam equipment:

A) Steam Sterilization Process:

Steam sterilization is achieved by exposing the items to be sterilized with saturated steam under pressure. Steam enhances the ability of heat to kill microorganisms by reducing the time and temperature required to denature or coagulate proteins in the microorganisms.

There are two types of sterilizers in the facility made by STERIS. Amsco 300 and 400 Series medium steam sterilizers. These prevacuum steam sterilizers efficiently heat and moisture stable materials and are equipped with prevacuum, gravity, liquid, and all applicable test cycles. They minimize condensation with a fully jacketed chamber and lessen the chance of air entering the chamber through the steam jacket. The control system includes an easy-to-read vacuum fluorescent display and an integral thermal printer. The sterilization temperature depends on the configuration. The gravity configuration has a sterilization temperature between 212° to 280°F, while the prevacuum configuration sterilization temperature can be set between 270° to 280°F.

B) Medical Washer Disinfectors

The facility has a new steam 86-Series washer disinfectors made by Getinge Group. It provides services for the cleaning and disinfection of reusable medical equipment.

C) Steam Exchange Humidification System

There are two roof mounted steam humidifiers made by DrySteam. They create chemical free humidification steam using the steam produce by the boilers as its energy source. Boiler steam in the heat exchanger vaporizes clean fill water into humidification steam, and no boiler steam or chemicals ever enter the humidified space, instead they return to the boiler. The units have a steam consumption capacity from 20 to 1600 lbs/hr and are controlled with a vapor logic controller and are in good condition.

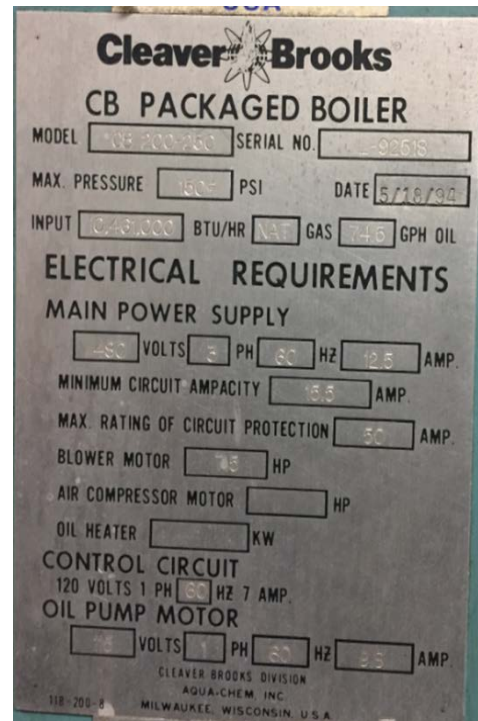


Image 12: Cleaver Brook Steam Boiler



Image 13: Amsco 300 & 400 Series Sterilizers & Steam Jacketed Chamber



Image 14: Medical Steam Washer Disinfector & Humidifier

2.8 Heating Hot Water Systems

Heating and domestic hot water is produced using 12 heat exchangers scattered throughout the facility. Heating hot water is supplied to air handlers, hydronic unit heaters, and baseboards through the heat exchangers using 19 constant flow hot water pumps, which range from 2 to 20 hp. The pumps are located in the boiler room in the Mancini and Patient Tower mechanical rooms. There is an opportunity for energy savings by installing variable frequency drives (VFDs) to control the hot water pump motors. Hot water is supplied at 180°F and the temperature in spaces is maintained around 70°F to 75°F throughout the year.



Image 15: Hot Water Pumps

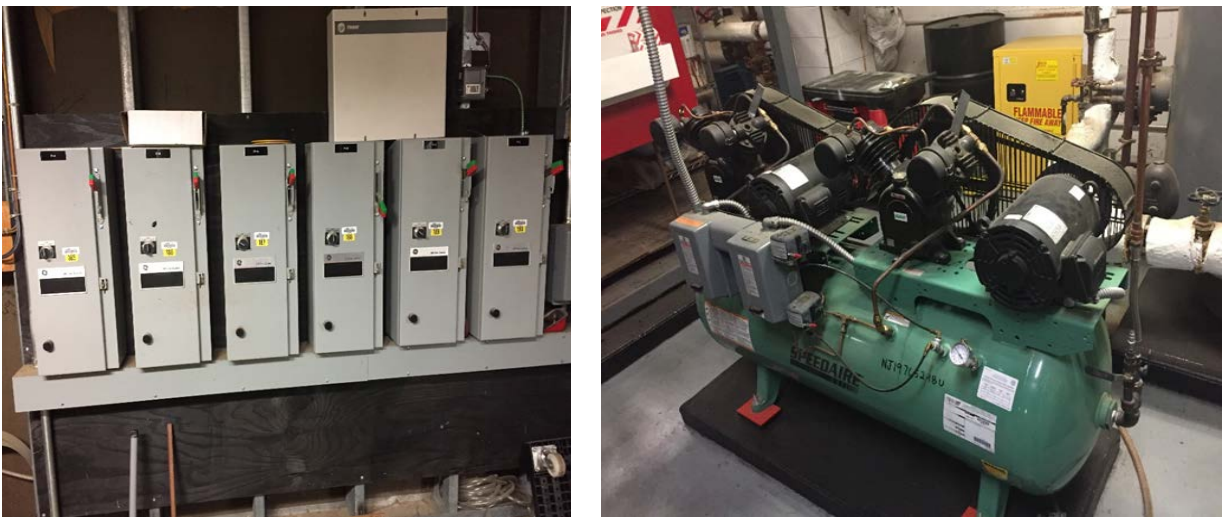


Image 16: Manual Pump Controls & Air Compressor

2.9 Chilled Water Systems

The chilled water system consists of three air-cooled reciprocating chillers, three air-cooled screw chillers, and three air-cooled-scroll chillers. Six of the nine chillers are configured in a primary-secondary distribution loop with 8 constant flow pumps ranging from 2 hp to 40 hp. The chilled water supply temperature is reset based on outside air temperature. Chilled water is distributed at 47°F when the outside air temperature is above 60°F and the setpoint is reset to 50°F when the outside air is below 55°F. The chillers are locked out when the outside air temperature is below 45°F. Chilled water is supplied to air handler unit coil for cooling. The three reciprocating chillers with a remote condensing unit have reached their useful life and appear in fair condition. They are well maintained, but there is an opportunity for energy savings by replacing them with a variable flow air cooled screw chiller. The two 185 Trane air cooled screw chillers, and the two York air cooled scroll chillers, are high efficiency chillers that are newer. There are two small medical chillers serving the Radiology and MRI areas. Refer to the table below for the condition and areas served by the chillers. The Mancini Pavilion and operating room (OR) Trane chillers are controlled with the building automation system.

Location	Quantity	Areas Served	Type	Capacity (Ton)	Manufacturer	Condition
OR/Patient Tower Mech Rooms	3	OR/Patient Tower	Air-Cooled Reciprocating Chiller	80	Trane	Fair
Rooftop	2	Mancini Pavilion	Air-Cooled Screw Chiller	185	Trane	Good
Rooftop	1	ED (AHU1)	Air-Cooled Scroll Chiller	88	York	Good
Rooftop	1	ED (AHU2)	Air-Cooled Scroll Chiller	108	York	Good
Roof	1	Radiology/Oncology	Air-Cooled Scroll Chiller	7.5	ArctiChill	Good
Ground Floor	1	MRI	Air-Cooled Screw Chiller	2.84	Airsys	Good



Image 24: York Air-Cooled Scroll & Trane Air-Cooled Screw Chillers



Image 25: Trane Reciprocating Chillers



Image 26: Medical Chillers



Image 27: 40 hp Chilled Water Pump

2.10 Medical Vacuum Compressed Air Systems

There are six medical vacuum systems made by Chemetron throughout the facility totaling 16 suction pumps. The systems are designed to remove unwanted fluids or gases from hospital and laboratory working areas. The vacuum is created by running the compressor, but instead of creating a high pressure in the pump and sending that compressed gas to the receiver tank, the pump sucks the gases out of the receiver tank and forces the compressor air outside, leaving a vacuum in the receiving tank. The vacuum pumps are direct driving through a shaft coupling by a totally enclosed fan cooled (TEFC) electric motor. The motor sizes vary from 5 hp to 10 hp. Two systems are outfitted with 4 pumps while the remaining systems have two motors each. Each system has a control panel that has the capability to set a minimum run time to prevent short cycling of the pump. Air leaks were found on one system during the survey and the staff immediately alerted the maintenance contractor to come to fix the leaks. The systems are well maintained.



Image 28: Four Pumps Medical Vacuum System



Image 29: Two Pumps Medical Vacuum System

2.11 Building Automation Systems (BAS)

The facility has a BAS system overlaying a pneumatic controls system powered by two air compressors. Only a partial HAVC equipment are controlled by the BAS system. It has the capability of aggregating the direct digital control (DDC) point from equipment it controls. The boilers appear in the system for monitoring purposes only. There is an opportunity for energy savings by upgrading and expanding the level of control and monitoring of the heating, ventilation, chilled water, and steam distribution systems in a single platform. The system can also be used for data collection and used to produce trend analysis and annual consumption forecasts.

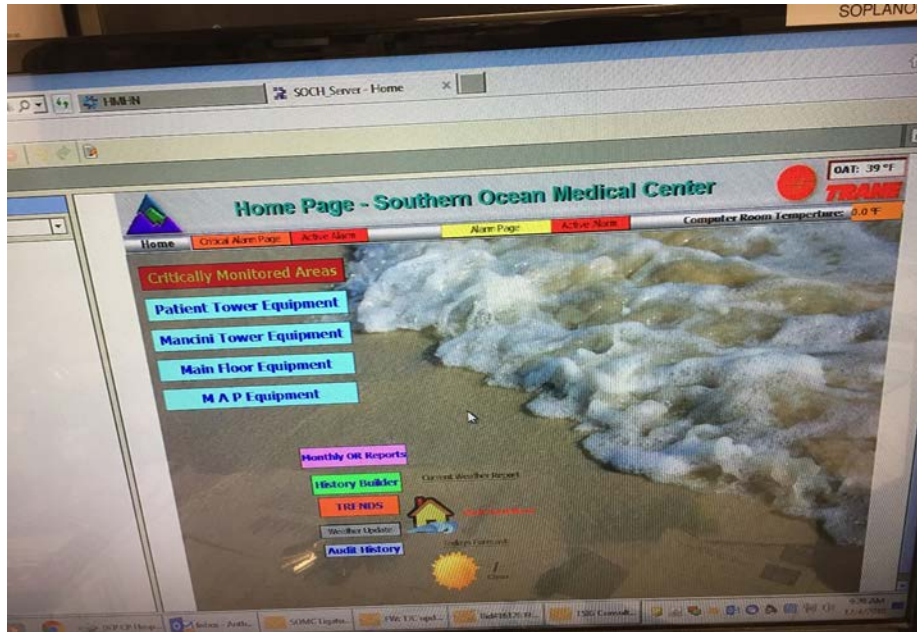


Image 30: Main Page - BAS System

2.12 Domestic Hot Water

The facility's domestic hot water system consists of seven electric water heaters, two gas fired heaters, and production through heat exchangers. The heaters are located throughout the facility and all appear in good condition. Refer to the table below for the type and capacity of the heaters. The facility partial domestic hot water is produced in the Patient Tower mechanical room using two low pressure steam exchangers.

Location	Quantity	Fuel Type	Input Capacity	Tank Capacity	manufacturer	Condition
Patient Tower/Radiology	2	Electric	6 kW	50/40 Gallon	Bradford White	Good
Mancini Pavilion	2	Natural Gas	200 MBh	98 Gallon	Bradford White	Good
MAP (1 st – 3rd Floor)	2	Electric	12 kW	119	A. O. Smith	Good
MAP (1 st – 2 nd Floor)	2	Electric	18 kW	119	A.O Smith/Rheem	Good
Oncology	1	Electric	6	119	A.O Smith	Good
PT Mech Room	1	Heat Exchanger	Unknown	Unknown	Unknown	Good



Image 31: DHW Through Low Pressure Heat Exchangers



Image 32: Gas Fired & Typical Electric Water Heater

2.13 Food Service Equipment

The hospital has a commercial cafeteria with a kitchen that has a mix of gas and electric equipment used to prepare meals, breakfasts, and lunches for the staff and visitors. The range tops, griddles, and convection ovens are all gas fired. The kitchen has a high temperature electric conveyor dishwasher with a 36 kW electric booster. The dishwasher is in good condition. The cafeteria operates round the clock and the kitchen is well maintained.



Image 17: Gas Fired Oven & Dishwasher

2.14 Refrigeration

The facility has many commercial and medical refrigeration systems which consist of standup refrigerators and freezers, walk-in coolers and freezer, and a commercial and medium size ice making machines. The refrigeration systems appear to be in good condition with most having an ENERGY STAR® label. The walk-in units need evaporator fan and electric defrost control to be upgraded.

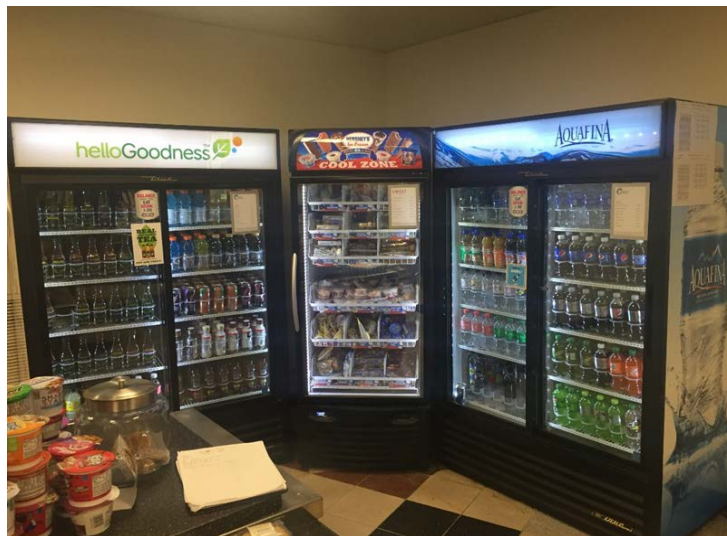


Image 18: Standup Glass Commercial Refrigerators



Image 19: Standup Solid Door Refrigerator & Walk-in Cooler



Image 20: Ice Machines

2.15 Plug Load & Vending Machines

The utility bill analysis indicates that plug loads consume approximately 4.50% percent of total building energy use. This is higher than a typical building.

You may wish to consider paying particular attention to minimizing the plug load usage. This report makes suggestions for ECMs in this area as well as Energy Efficient Best Practices.

There are approximately 582 computer work stations throughout the facility. Plug loads throughout the facility include general medical equipment. There facility has the typical medical loads such as patient monitoring, diagnostic, medical imaging, X-ray, surgical, therapeutic, life-support, and laboratory devices. Imaging equipment, such as an MRI machine or a CT scanner, typically represents the largest single plug load. Medical devices such as patient monitors and EKGs also are considered major energy consumers because while they draw moderate amounts of power, they are used quite frequently. Where applicable, it would be ideal to reduce medical equipment loads by using energy-saving settings during working hours and by turning off devices during any appropriate non-working hours.

There are several residential style refrigerators throughout the facility. There are 4 refrigerated beverage vending machines and 3 non-refrigerated vending machines. Vending machines are not equipped with occupancy-based controls.

Other plug load equipment includes printers, copy machines, wall TVs, water coolers, and microwaves. There is also a data center with several equipment with cooling provided by four split systems air conditioners.



Image 21: Copy Machine & Main Server

2.16 Water-Using Systems

There are several restrooms with toilets, urinals, and sinks. Faucet flow rates are rated as low flow. Toilets are rated at 2.2 gallons per flush (gpf) and urinals are rated at 2.2 gpf. There are two restrooms with showers and showerheads are rated as low.

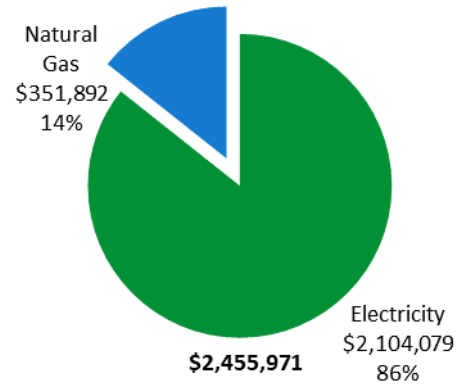
2.17 On-Site Generation

The Southern Ocean Medical Center has three diesel emergency generator that, in the event of a power outage, serves the facility. They have a capacity of 500 kW, 800 kW and 1,250 kW respectively.

3 ENERGY USE AND COSTS

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

Utility Summary		
Fuel	Usage	Cost
Electricity	12,538,480 kWh	\$2,104,079
Natural Gas	389,983 Therms	\$351,892
Total		\$2,455,971



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

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

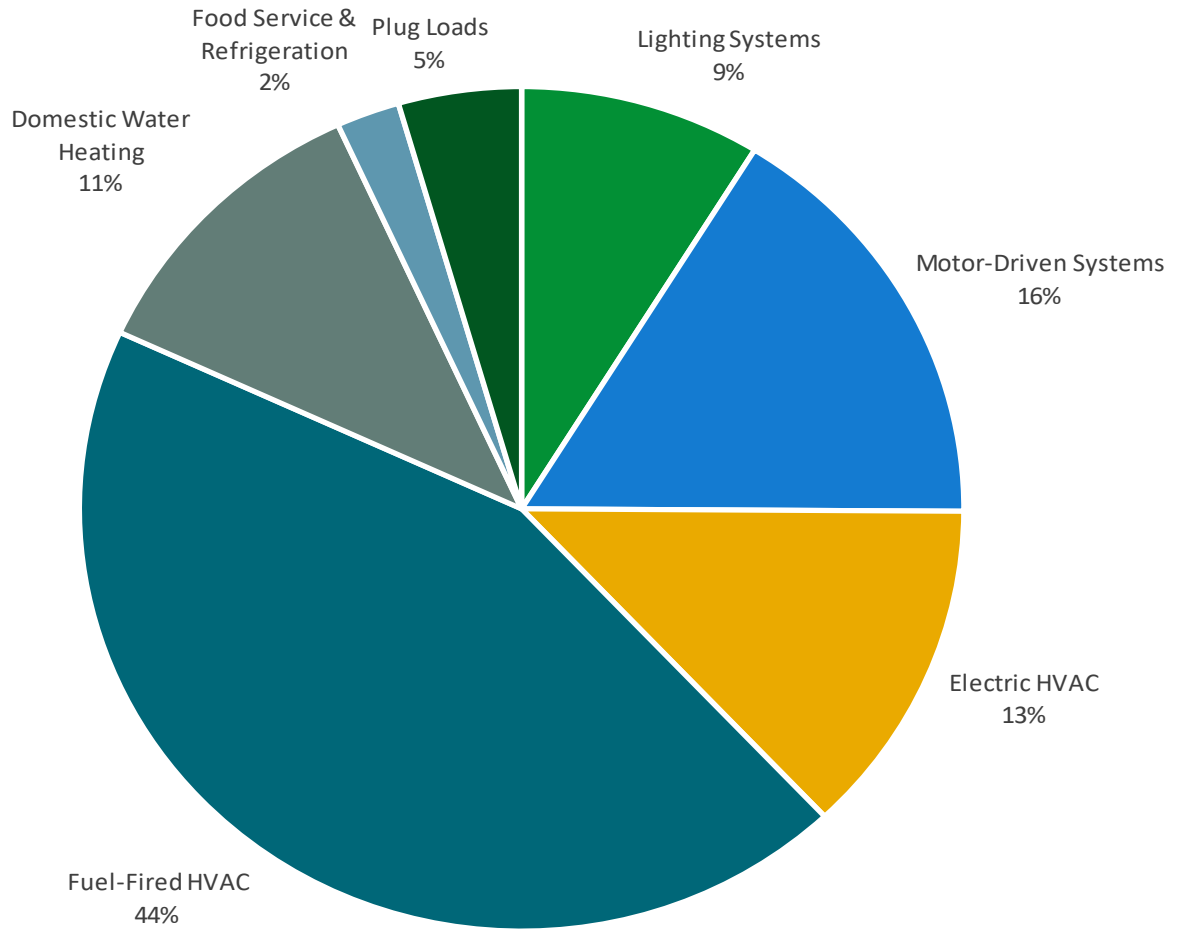
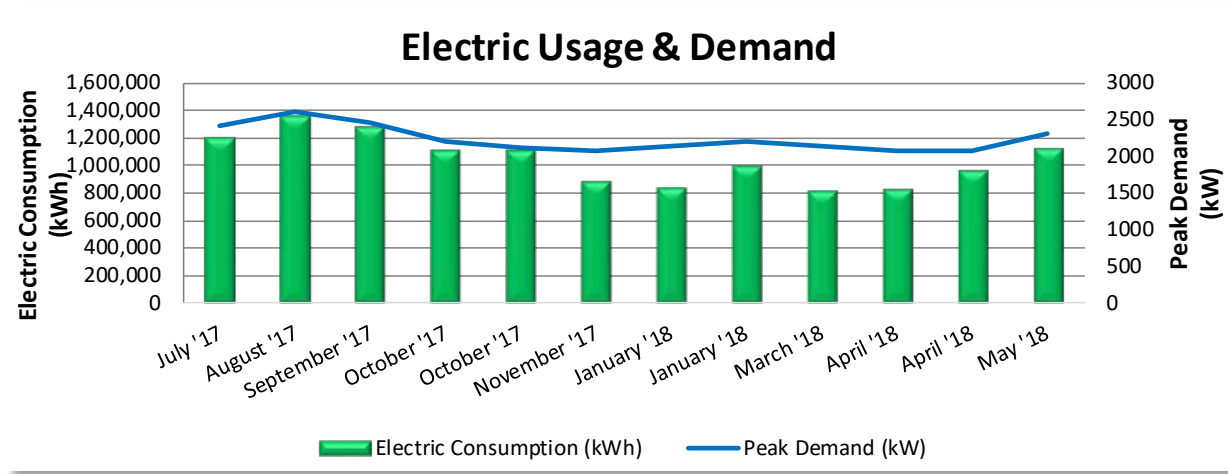


Figure 5 - Energy Balance

3.1 Electricity

Atlantic City Electric delivers electricity under rate class Annual General Service Secondary, with electric production provided by New Direct Energy, a third-party supplier.



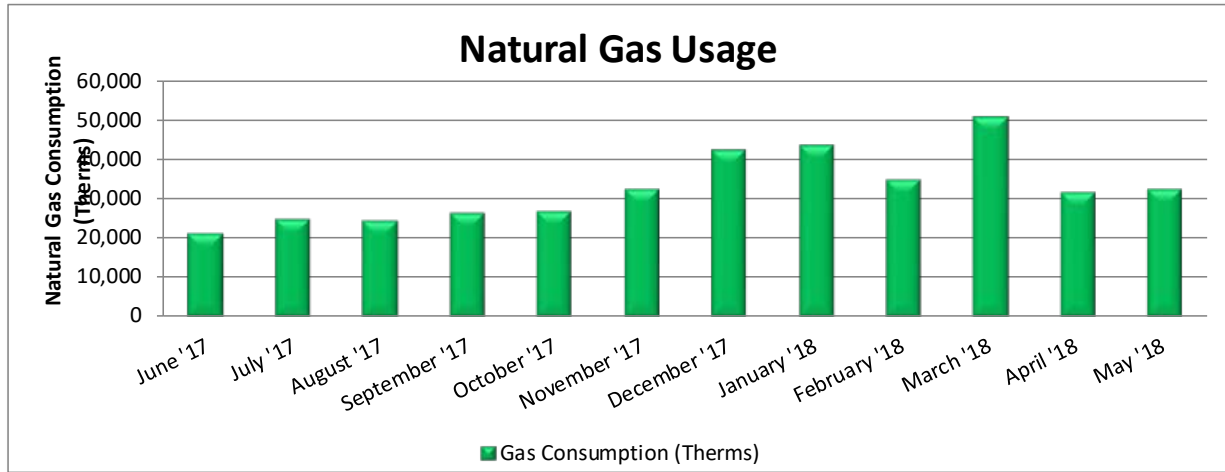
Electric Billing Data				
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Total Electric Cost
7/17/17	31	1,206,859	2,418	\$196,661
8/16/17	31	1,366,665	2,608	\$221,432
9/16/17	30	1,284,912	2,457	\$208,207
10/16/17	31	1,116,145	2,209	\$180,762
11/14/17	30	1,113,457	2,128	\$179,342
12/14/17	31	883,667	2,085	\$145,486
1/17/18	31	842,394	2,147	\$140,597
2/14/18	28	998,444	2,198	\$167,925
3/16/18	31	812,004	2,143	\$138,024
4/16/18	30	830,668	2,085	\$141,027
5/15/18	31	960,705	2,085	\$200,450
6/15/18	30	1,122,560	2,319	\$184,166
Totals	365	12,538,480	2,608	\$2,104,079
Annual	365	12,538,480	2,608	\$2,104,079

Notes:

- Peak demand of 2,608 kW occurred in August '17.
- The average electric cost over the past 12 months was \$0.168/kWh, which is the blended rate that includes energy supply, distribution, demand, and other charges. This report uses this blended rate to estimate energy cost savings.
- Higher energy consumption in summer months is indicative of the air conditioning usage as primary load.

3.2 Natural Gas

New Jersey Natural Gas delivers natural gas, with natural gas supply provided by Direct Energy, a third-party supplier.



Gas Billing Data			
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost
6/24/17	30	20,967	\$21,112
7/26/17	31	24,658	\$25,002
8/26/17	31	24,230	\$24,618
9/26/17	30	26,323	\$26,494
10/24/17	31	26,494	\$25,708
11/22/17	30	32,369	\$30,340
12/26/17	31	42,417	\$38,780
1/25/18	31	43,457	\$39,094
2/23/18	28	34,588	\$31,698
3/31/18	31	50,623	\$31,622
4/28/18	30	31,510	\$28,374
5/30/18	31	32,347	\$29,051
Totals	365	389,983	\$351,892
Annual	365	389,983	\$351,892

Notes:

- The average gas cost for the past 12 months is \$0.902/therm, which is the blended rate used throughout the analysis.
- Boilers operate all year to provide steam for process and domestic hot water loads when there is no space heating demand.

3.4 Benchmarking

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

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

Benchmarking Score	77
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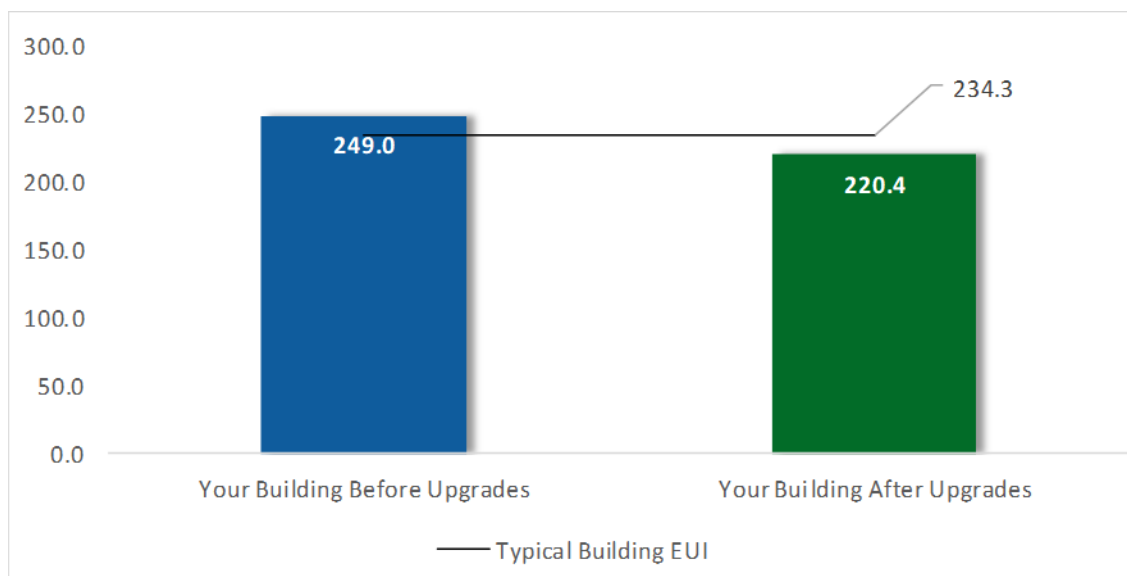


Figure 6 - Energy Use Intensity Comparison

Congratulations, your building performs better than the national average. This report has suggestions about how to keep your building running efficiently, further improve performance, and lower your energy bills even more.

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

Tracking Your Energy Performance

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

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

Free online training is available to help you use ENERGY STAR® Portfolio Manager® to track your building's performance at: <https://www.energystar.gov/buildings/training>.

For more information on ENERGY STAR® and Portfolio Manager®, visit their website³.

³ <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1>

4 ENERGY CONSERVATION MEASURES

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

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

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

Financial incentives are based on the current NJCEP prescriptive SmartStart program. A higher level of investigation may be necessary to support any SmartStart Custom, Pay for Performance, or Direct Install incentive applications. Some measures and proposed upgrades may be eligible for higher incentives than those shown below through other NJCEP programs described in a following section of this report.

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

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Lifetime Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		818,042	96.0	-172	\$135,725	\$2,035,871	\$131,652	\$19,727	\$111,925	0.8	803,640
ECM 1	Install LED Fixtures	1,793	0.3	0	\$301	\$4,514	\$2,898	\$300	\$2,598	8.6	1,806
ECM 2	Retrofit Fixtures with LED Lamps	816,249	95.7	-172	\$135,424	\$2,031,357	\$128,754	\$19,427	\$109,327	0.8	801,834
Lighting Control Measures		11,609	1.3	-2	\$1,926	\$15,406	\$6,210	\$455	\$5,755	3.0	11,400
ECM 3	Install Occupancy Sensor Lighting Controls	11,609	1.3	-2	\$1,926	\$15,406	\$6,210	\$455	\$5,755	3.0	11,400
Motor Upgrades		115,662	23.2	0	\$19,409	\$291,139	\$165,948	\$0	\$165,948	8.5	116,471
ECM 4	Premium Efficiency Motors	115,662	23.2	0	\$19,409	\$291,139	\$165,948	\$0	\$165,948	8.5	116,471
Variable Frequency Drive (VFD) Measures		728,324	139.6	200	\$124,022	\$1,860,331	\$258,318	\$35,380	\$222,938	1.8	756,803
ECM 5	Install VFDs on Constant Volume (CV) Fans	415,287	94.3	0	\$69,689	\$1,045,339	\$145,039	\$26,080	\$118,959	1.7	418,191
ECM 6	Install VFDs on Chilled Water Pumps	119,944	19.0	0	\$20,128	\$301,916	\$37,088	\$4,800	\$32,288	1.6	120,782
ECM 7	Install VFDs on Heating Water Pumps	143,681	11.4	0	\$24,111	\$361,667	\$61,759	\$0	\$61,759	2.6	144,686
ECM 8	Install VFDs on Boiler Feedwater Pumps	33,285	14.9	0	\$5,586	\$83,784	\$11,424	\$3,600	\$7,824	1.4	33,518
ECM 9	Install VFDs on Kitchen Hood Fan Motors	16,126	0.0	200	\$4,508	\$67,625	\$3,008	\$900	\$2,108	0.5	39,625
Electric Unitary HVAC Measures		223,278	56.0	0	\$37,468	\$562,024	\$841,595	\$6,281	\$835,314	22.3	224,840
	Install High Efficiency Air Conditioning Units	148,887	52.3	0	\$24,985	\$374,771	\$470,943	\$2,527	\$468,416	18.7	149,928
	Install High Efficiency Heat Pumps	74,391	3.7	0	\$12,484	\$187,253	\$370,651	\$3,754	\$366,898	29.4	74,911
Electric Chiller Replacement		290,012	136.5	0	\$48,667	\$973,336	\$236,334	\$21,600	\$214,734	4.4	292,040
ECM 10	Install High Efficiency Chillers	290,012	136.5	0	\$48,667	\$973,336	\$236,334	\$21,600	\$214,734	4.4	292,040
Gas Heating (HVAC/Process) Replacement		0	0.0	2,279	\$20,567	\$411,334	\$295,840	\$800	\$295,040	14.3	266,877
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,188	\$19,741	\$394,818	\$286,777	\$0	\$286,777	14.5	256,161
ECM 12	Install High Efficiency Furnaces	0	0.0	92	\$826	\$16,515	\$9,063	\$800	\$8,263	10.0	10,715
HVAC System Improvements		9,074	0.0	240	\$3,685	\$54,217	\$7,017	\$0	\$7,017	1.9	37,194
ECM 13	Implement Demand Control Ventilation (DCV)	9,074	0.0	210	\$3,421	\$51,314	\$6,797	\$0	\$6,797	2.0	33,769
ECM 14	Install Pipe Insulation	0	0.0	29	\$264	\$2,903	\$220	\$0	\$220	0.8	3,425
Food Service & Refrigeration Measures		35,120	3.1	0	\$5,893	\$80,033	\$9,924	\$735	\$9,189	1.6	35,365
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	14,068	1.7	0	\$2,361	\$35,410	\$2,426	\$160	\$2,266	1.0	14,166
ECM 16	Refrigeration Controls	14,605	0.6	0	\$2,451	\$39,214	\$6,578	\$375	\$6,203	2.5	14,707
ECM 17	Vending Machine Control	6,447	0.7	0	\$1,082	\$5,410	\$920	\$200	\$720	0.7	6,492
TOTALS		2,231,120	455.7	2,544	\$397,362	\$6,283,691	\$1,952,837	\$84,978	\$1,867,860	4.7	2,544,629

* - All incentives presented in this table are based on NJ SmartStart 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).

Figure 7 – All Evaluated ECMs

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
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ECM 4	Premium Efficiency Motors	115,662	23.2	0	\$19,409	\$165,948	\$0	\$165,948	8.5	116,471
Variable Frequency Drive (VFD) Measures		728,324	139.6	200	\$124,022	\$258,318	\$35,380	\$222,938	1.8	756,803
ECM 5	Install VFDs on Constant Volume (CV) Fans	415,287	94.3	0	\$69,689	\$145,039	\$26,080	\$118,959	1.7	418,191
ECM 6	Install VFDs on Chilled Water Pumps	119,944	19.0	0	\$20,128	\$37,088	\$4,800	\$32,288	1.6	120,782
ECM 7	Install VFDs on Heating Water Pumps	143,681	11.4	0	\$24,111	\$61,759	\$0	\$61,759	2.6	144,686
ECM 8	Install VFDs on Boiler Feedwater Pumps	33,285	14.9	0	\$5,586	\$11,424	\$3,600	\$7,824	1.4	33,518
ECM 9	Install VFDs on Kitchen Hood Fan Motors	16,126	0.0	200	\$4,508	\$3,008	\$900	\$2,108	0.5	39,625
Electric Chiller Replacement		290,012	136.5	0	\$48,667	\$236,334	\$21,600	\$214,734	4.4	292,040
ECM 10	Install High Efficiency Chillers	290,012	136.5	0	\$48,667	\$236,334	\$21,600	\$214,734	4.4	292,040
Gas Heating (HVAC/Process) Replacement		0	0.0	2,279	\$20,567	\$295,840	\$800	\$295,040	14.3	266,877
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,188	\$19,741	\$286,777	\$0	\$286,777	14.5	256,161
ECM 12	Install High Efficiency Furnaces	0	0.0	92	\$826	\$9,063	\$800	\$8,263	10.0	10,715
HVAC System Improvements		9,074	0.0	240	\$3,685	\$7,017	\$0	\$7,017	1.9	37,194
ECM 13	Implement Demand Control Ventilation (DCV)	9,074	0.0	210	\$3,421	\$6,797	\$0	\$6,797	2.0	33,769
ECM 14	Install Pipe Insulation	0	0.0	29	\$264	\$220	\$0	\$220	0.8	3,425
Food Service & Refrigeration Measures		35,120	3.1	0	\$5,893	\$9,924	\$735	\$9,189	1.6	35,365
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	14,068	1.7	0	\$2,361	\$2,426	\$160	\$2,266	1.0	14,166
ECM 16	Refrigeration Controls	14,605	0.6	0	\$2,451	\$6,578	\$375	\$6,203	2.5	14,707
ECM 17	Vending Machine Control	6,447	0.7	0	\$1,082	\$920	\$200	\$720	0.7	6,492
TOTALS		2,007,842	399.7	2,544	\$359,894	\$1,111,242	\$78,697	\$1,032,545	2.9	2,319,790

* - All incentives presented in this table are based on NJ SmartStart 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).

Figure 8 – Cost Effective ECMs

4.1 Lighting

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		818,042	96.0	-172	\$135,725	\$131,652	\$19,727	\$111,925	0.8	803,640
ECM 1	Install LED Fixtures	1,793	0.3	0	\$301	\$2,898	\$300	\$2,598	8.6	1,806
ECM 2	Retrofit Fixtures with LED Lamps	816,249	95.7	-172	\$135,424	\$128,754	\$19,427	\$109,327	0.8	801,834

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

ECM 1: Install LED Fixtures

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

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

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

Affected building areas: exterior fixtures.

ECM 2: Retrofit Fixtures with LED Lamps

Replace fluorescent T5 and T8, CFL and incandescent lamps with LED lamps. Many LED tubes are direct replacements for existing fluorescent tubes and can be installed while leaving the fluorescent fixture ballast in place. LED lamps can be used in existing fixtures as a direct replacement for most other lighting technologies.

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

Affected building areas: all interior areas with fluorescent fixtures with T5 and T8 tubes, CFL, and incandescent lamps.

4.2 Lighting Controls

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Control Measures		11,609	1.3	-2	\$1,926	\$6,210	\$455	\$5,755	3.0	11,400
ECM 3	Install Occupancy Sensor Lighting Controls	11,609	1.3	-2	\$1,926	\$6,210	\$455	\$5,755	3.0	11,400

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

ECM 3: Install Occupancy Sensor Lighting Controls

Install occupancy sensors to control lighting fixtures in areas that are frequently unoccupied, even for short periods. Due to the hospital facility most areas always need to remain illuminated hence this measure is only recommended for certain private offices, storage, and restrooms which are unoccupied most of the time. For most spaces, we recommend lighting controls use dual technology sensors, which reduce the possibility of lights turning off unexpectedly.

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

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

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

Affected building areas: offices, conference rooms, and storage rooms.

4.3 Motors

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Motor Upgrades		115,662	23.2	0	\$19,409	\$165,948	\$0	\$165,948	8.5	116,471
ECM 4	Premium Efficiency Motors	115,662	23.2	0	\$19,409	\$165,948	\$0	\$165,948	8.5	116,471

ECM 4: Premium Efficiency Motors

Replace standard efficiency motors with IHP 2014 efficiency motors. This evaluation assumes that existing motors will be replaced with motors of equivalent size and type. In some cases, additional savings may be possible by downsizing motors to better meet the motor’s current load requirements.

Affected motors:

Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Additional Motor Description
Boiler Room	Feed Water Pumps	3	Boiler Feed Water Pump	10.0	Boiler Feed Water Pump
Boiler Room	Hot Water System	2	Heating Hot Water Pump	7.5	Heating Hot Water Pump
Boiler Room	Endo-Maternity-OR	2	Heating Hot Water Pump	7.5	Heating Hot Water Pump
O.R Mechanical Room	Operating Rooms	2	Chilled Water Pump	2.0	Chilled Water Pump
O.R Mechanical Room	Same Day Surgery/Waiting Area (AHU2)	1	Supply Fan	2.0	Supply Fan
Mechanical Room 1	Operating Rooms (AHU1)	1	Supply Fan	2.0	Supply Fan

Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Additional Motor Description
Mechanical Room 1	Chilled Water	1	Chilled Water Pump	5.0	Chilled Water Pump
Mancini Mechanical Room	Mancini Tower	2	Heating Hot Water Pump	5.0	Heating Hot Water Pump
Mancini Mechanical Room	Patient Tower	2	Heating Hot Water Pump	20.0	Heating Hot Water Pump
Mancini Mechanical Room	Mancini Mechanical Room	1	Exhaust Fan	5.0	Exhaust Fan
Mancini Mechanical Room	AHU3 - Dining Area	1	Supply Fan	20.0	Supply Fan
Mancini Mechanical Room	AHU3 - Dining Area	1	Return Fan	0.5	Return Fan
Mancini Mechanical Room	AHU3 - Dining Area	1	Return Fan	5.0	Return Fan
Mancini Mechanical Room	AHU1 - Lower Level	1	Supply Fan	10.0	Supply Fan
Mancini Mechanical Room	AHU1 - Lower Level	1	Return Fan	3.0	Return Fan
Mancini Mechanical Room	AHU2 - Room 103	1	Supply Fan	7.5	Supply Fan
Mancini Mechanical Room	AHU2 - Room 103	1	Return Fan	1.5	Return Fan

Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Additional Motor Description
Radiology/Oncology Mech Room	Radiology/Oncology (AHU1)	1	Supply Fan	10.0	MacQuay AHU1
Radiology/Oncology Mech Room	Radiology/Oncology (AHU1)	1	Return Fan	3.0	MacQuay AHU1
4th Floor Mech Room	Chilled Water	2	Chilled Water Pump	40.0	Chilled Water Pump
4th Floor Mech Room	AHU8	1	Supply Fan	25.0	Supply Fan
Roof Top	Kitchen	1	Kitchen Hood Exhaust Fan	3.0	Kitchen Hood Exhaust Fan

Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Additional Motor Description
Roof Top	Patient Tower - Temtrol Unit - AHU1	1	Supply Fan	50.0	Supply Fan
Roof Top	Patient Tower - Temtrol Unit	1	Return Fan	20.0	Return Fan
Patien Tower Mech Room	Patient Tower	2	Heating Hot Water Pump	3.0	Heating Hot Water Pump
Patien Tower Mech Room	Patient Tower	2	Chilled Water Pump	3.0	Chilled Water Pump
Patien Tower Mech Room	Patient Tower	3	Heating Hot Water Pump	3.0	Heating Hot Water Pump
Patien Tower Mech Room	AHU1	1	Chilled Water Pump	7.5	Chilled Water Pump
Patien Tower Mech Room	Reheat Coils	2	Heating Hot Water Pump	2.0	Heating Hot Water Pump
Patien Tower Mech Room	Hot Water System - East Zone	2	Heating Hot Water Pump	10.0	Heating Hot Water Pump

Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Additional Motor Description
Roof Top	SPD	1	Exhaust Fan	1.0	Exhaust Fan
Roof Top	ED	1	Exhaust Fan	3.0	Exhaust Fan
Roof Top	ED	1	Exhaust Fan	2.0	Exhaust Fan

Savings are based on the difference between baseline and proposed efficiencies and the assumed annual operating hours. The base case motor energy consumption is estimated using the efficiencies found on nameplates or estimated based on the age of the motor and our best estimates of motor run hours. Efficiencies of proposed motor upgrades are obtained from the current *New Jersey's Clean Energy Program Protocols to Measure Resource Savings*.

4.4 Variable Frequency Drives (VFD)

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Variable Frequency Drive (VFD) Measures		728,324	139.6	200	\$124,022	\$258,318	\$35,380	\$222,938	1.8	756,803
ECM 5	Install VFDs on Constant Volume (CV) Fans	415,287	94.3	0	\$69,689	\$145,039	\$26,080	\$118,959	1.7	418,191
ECM 6	Install VFDs on Chilled Water Pumps	119,944	19.0	0	\$20,128	\$37,088	\$4,800	\$32,288	1.6	120,782
ECM 7	Install VFDs on Heating Water Pumps	143,681	11.4	0	\$24,111	\$61,759	\$0	\$61,759	2.6	144,686
ECM 8	Install VFDs on Boiler Feedwater Pumps	33,285	14.9	0	\$5,586	\$11,424	\$3,600	\$7,824	1.4	33,518
ECM 9	Install VFDs on Kitchen Hood Fan Motors	16,126	0.0	200	\$4,508	\$3,008	\$900	\$2,108	0.5	39,625

Variable frequency drives control motors for fans, pumps, and process equipment based on the actual output required of the driven equipment. Energy savings result from more efficient control of motor energy usage when equipment operates at partial load. The magnitude of energy savings depends on the estimated amount of time that the motor would operate at partial load. For equipment with proposed VFDs, we have included replacing the controlled motor with a new motor —unless the existing motor meets or exceeds IHP 2014 standards—to conservatively account for the cost of an inverter duty rated motor. The savings and cost associated with the new motor are presented with the Premium Efficiency Motor measures. If the proposed VFD measure is not selected for implementation the motor replacement should be reevaluated.

ECM 5: Install VFDs on Constant Volume (CV) Fans

Install VFDs to control constant volume fan motor speeds. This converts a constant-volume, single-zone air handling system into a variable-air-volume (VAV) system. A separate VFD is usually required to control the return fan motor or dedicated exhaust fan motor, if the air handler has one. As this is a hospital facility care must be taken to ensure proper pressurization requirements are met in the zones.

Zone thermostats signal the VFD to adjust fan speed to maintain the appropriate temperature in the zone, while maintaining a constant supply air temperature.

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

For air handlers with direct expansion (DX) cooling systems, the minimum air flow across the cooling coil required to prevent the coil from freezing must be determined during the final project design. The control system programming should maintain the minimum air flow whenever the compressor is operating.

Energy savings result from reducing the fan speed (and power) when conditions allow for reduced air flow.

ECM 6: Install VFDs on Chilled Water Pumps

Install VFDs to control chilled water pumps. Two-way valves must serve the chilled water coils being served and the chilled water loop must have a differential pressure sensor installed. If three-way valves or a bypass leg are used in the chilled water distribution they will need to be modified when this measure is implemented. As the chilled water valves close, the differential pressure increases, and the VFD modulates the pump speed to maintain a differential pressure setpoint.

For systems with variable chilled water flow through the chiller, the minimum flow to prevent the chiller from tripping off will need to be determined during the final project design. The control system should be programmed to maintain the minimum flow through the chiller and to prevent pump cavitation.

Energy savings result from reducing the pump motor speed (and power) as chilled water valves close. The magnitude of energy savings is based on the estimated amount of time that the system operates at reduced loads.

ECM 7: Install VFDs on Heating Water Pumps

Install variable frequency drives (VFD) to control heating water pumps. Two-way valves must serve the hot water coils, and the hot water loop must have a differential pressure sensor installed. If three-way valves or a bypass leg are used in the hot water distribution, they will need to be modified when this measure is implemented. As the hot water valves close, the differential pressure increases and the VFD modulates the pump speed to maintain a differential pressure setpoint.

Energy savings result from reducing pump motor speed (and power) as hot water valves close. The magnitude of energy savings is based on the estimated amount of time that the system will operate at reduced load.

ECM 8: Install VFDs on Boiler Feedwater Pumps

Install VFDs to control boiler feedwater pumps. The existing level control valve will need to be maintained fully open and its control signal used by the VFD to modulate the feedwater speed.

Energy savings result from reducing the pump motor speed (and power) at reduced feedwater flow. The magnitude of energy savings is based on the estimated amount of time that the pumping system will operate at reduced load.

ECM 9: Install VFDs on Kitchen Hood Fan Motors

Install VFDs and sensors to control the kitchen hood fan motors. The air flow of the hood is varied based on two key inputs: temperature and smoke/cooking fumes. The VFD controls the amount of exhaust (and kitchen make-up air) based on temperature—the lower the temperature the lower the flow. If the optic sensor is triggered by smoke or cooking fumes, the speed of the fan ramps up to 100%.

Energy savings result from reducing the hood fan speed (and power) when conditions allow for reduced air flow.

4.5 Electric Unitary HVAC

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Electric Unitary HVAC Measures		223,278	56.0	0	\$37,468	\$841,595	\$6,281	\$835,314	22.3	224,840
	Install High Efficiency Air Conditioning Units	148,887	52.3	0	\$24,985	\$470,943	\$2,527	\$468,416	18.7	149,928
	Install High Efficiency Heat Pumps	74,391	3.7	0	\$12,484	\$370,651	\$3,754	\$366,898	29.4	74,911

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

Install High Efficiency Air Conditioning Units

Replace standard efficiency packaged air conditioning units with high efficiency packaged air conditioning units. The magnitude of energy savings for this measure depends on the relative efficiency of the older unit versus the new high efficiency unit, the average cooling load, and the estimated annual operating hours.

Install High Efficiency Heat Pumps

Replace standard efficiency heat pumps with high efficiency heat pumps. A higher EER or SEER rating indicates a more efficient cooling system and a higher HPSF rating indicates more efficient heating mode. The magnitude of energy savings for this measure depends on the relative efficiency of the older unit versus the new high efficiency unit, the average heating and cooling loads, and the estimated annual operating hours.

4.6 Electric Chillers

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Electric Chiller Replacement		290,012	136.5	0	\$48,667	\$236,334	\$21,600	\$214,734	4.4	292,040
ECM 11	Install High Efficiency Chillers	290,012	136.5	0	\$48,667	\$236,334	\$21,600	\$214,734	4.4	292,040

ECM 10: Install High Efficiency Chillers

Replace older inefficient air-cooled reciprocating Trane chillers with new high efficiency chillers. The type of chiller to be installed depends on the magnitude of the cooling load and variability of the cooling load profile, for example:

- Positive displacement chillers are usually under 600 tons of cooling capacity and centrifugal chillers generally start at 150 tons of cooling capacity.
- Constant speed chillers should be used to meet cooling loads with little or no variation while variable speed chillers are more efficient for variable cooling load profiles.
- Water cooled chillers are more efficient than air cooled chillers but require cooling towers and additional pumps to circulate the cooling water.
- In any given size range, variable speed chillers tend to have better partial load efficiency, but worse full load efficiency, than constant speed chillers.

Energy savings result from the improvement in chiller efficiency and matching the right type of chiller to the cooling load. The energy savings are calculated based on the cooling capacity of the new chiller, the improvement in efficiency compared with the base case equipment, the cooling load profile, and the estimated annual operating hours of the chiller before and after the upgrade.

For the purposes of this analysis, we evaluated the replacement of chillers on a one-for-one basis with equipment of the same capacity. We recommend that you work with your design team to select chillers that are sized appropriately for the cooling load at this facility. In some cases, the plant energy use can be reduced by selecting multiple chillers that match the facility load profile rather than one or two large chillers. This can also improve the chiller plant reliability through increased redundancy. Energy savings are maximized by proper selection of new equipment based on the cooling load profile.

4.7 Gas-Fired Heating

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement		0	0.0	2,279	\$20,567	\$295,840	\$800	\$295,040	14.3	266,877
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,188	\$19,741	\$286,777	\$0	\$286,777	14.5	256,161
ECM 12	Install High Efficiency Furnaces	0	0.0	92	\$826	\$9,063	\$800	\$8,263	10.0	10,715

ECM 11: Install High Efficiency Steam Boilers

Replace older inefficient (2) 8,368 MBh steam boilers with high efficiency steam boilers. Energy savings results from improved combustion efficiency and reduced standby losses at low loads.

For the purposes of this analysis, we evaluated the replacement of boilers on a one-for-one basis with equipment of the same capacity. However, based on the utility bill analysis and site interview the facility only needs one of the two boilers to meet demand during a typical year. Currently in the summer and spring months when there is low demand for hot water, the facility must keep at least one of the large boilers running causing it to operate at a load significantly lower than its peak capacity thus wasting energy. A more efficient arrangement would be installing smaller modular boilers which can modulate capacity based on demand only firing the number of boilers needed saving significantly on gas usage. In addition, modular boiler arrangement would also provide redundancy in operation.

We recommend that you work with your mechanical design team to select boilers that are sized appropriately for the heating load at this facility. In many cases installing multiple modular boilers rather than one or two large boilers will result in higher overall plant efficiency while providing additional system redundancy.

ECM 12: Install High Efficiency Furnaces

Replace standard efficiency furnaces (MAU1, MAU2) with condensing furnaces. Improved combustion technology and heat exchanger design optimize heat recovery from the combustion gases which can significantly improve furnace efficiency. Savings result from improved system efficiency.

Note: these units produce acidic condensate that requires proper drainage.

4.8 HVAC

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
HVAC System Improvements		9,074	0.0	240	\$3,685	\$7,017	\$0	\$7,017	1.9	37,194
ECM 13	Implement Demand Control Ventilation (DCV)	9,074	0.0	210	\$3,421	\$6,797	\$0	\$6,797	2.0	33,769
ECM 14	Install Pipe Insulation	0	0.0	29	\$264	\$220	\$0	\$220	0.8	3,425

ECM 13: Implement Demand Control Ventilation (DCV)

Demand control ventilation (DCV) monitors the indoor air's carbon dioxide (CO₂) content to measure room occupancy. This data is used to regulate the amount of outdoor air provided to the space for ventilation.

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

Energy savings associated with DCV are based on hours of operation, space occupancy, system air flow, outside air reduction, and other factors. Energy savings results from eliminating unnecessary ventilation and space conditioning. Care must be taken to ensure proper pressurization requirements are met in the zones where DCV is implemented.

Affected building areas: dining area.

ECM 14: Install Pipe Insulation

Install insulation on heating water system piping. Distribution system losses are dependent on water system temperature, the size of the distribution system, and the level of insulation of the piping. Significant energy savings can be achieved when insulation has not been well maintained. When the insulation is exposed to water, when the insulation has been removed from some areas of the pipe, or when valves have not been properly insulated system efficiency can be significantly reduced. This measure saves energy by reducing heat transfer in the distribution system.

4.9 Food Service & Refrigeration Measures

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Food Service & Refrigeration Measures		35,120	3.1	0	\$5,893	\$9,924	\$735	\$9,189	1.6	35,365
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	14,068	1.7	0	\$2,361	\$2,426	\$160	\$2,266	1.0	14,166
ECM 16	Refrigeration Controls	14,605	0.6	0	\$2,451	\$6,578	\$375	\$6,203	2.5	14,707
ECM 17	Vending Machine Control	6,447	0.7	0	\$1,082	\$920	\$200	\$720	0.7	6,492

ECM 15: Refrigerator/Freezer Case Electrically Commutated Motors

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

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

ECM 16: Refrigeration Controls

Install additional controls to optimize the operation of walk-in coolers and freezers.

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

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

ECM 17: Vending Machine Control

Vending machines operate continuously, even during unoccupied hours. Install occupancy sensor controls to reduce energy use. These controls power down vending machines when the vending machine area has been vacant for some time, and they power up the machines at necessary regular intervals or when the surrounding area is occupied. Energy savings are dependent on the vending machine and activity level in the area surrounding the machines.

5 ENERGY EFFICIENT BEST PRACTICES

A whole building maintenance plan will extend equipment life; improve occupant comfort, health, and safety; and reduce energy and maintenance costs. You may already be doing some of these things— see our list below for potential additions to your maintenance plan. Be sure to consult with qualified equipment specialists for details on proper maintenance and system operation.

Energy Tracking with ENERGY STAR® Portfolio Manager®



You've heard it before - you can't manage what you don't measure. ENERGY STAR® Portfolio Manager® is an online tool that you can use to measure and track energy and water consumption, as well as greenhouse gas emissions⁴. Your account has already been established. Now you can continue to keep tabs on your energy performance every month.

Weatherization

Caulk or weather strip leaky doors and windows to reduce drafts and loss of heated or cooled air. Sealing cracks and openings can reduce heating and cooling costs, improve building durability, and create a healthier indoor environment.

Doors and Windows

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

Lighting Controls

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

Motor Controls

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. Whenever possible, use automatic devices such as twist timers or occupancy sensors to turn off motors when they are not needed.

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

Motor Short Cycling Reduction

Frequent stopping and starting of motors places substantial stress on rotors and other parts. This leads to wear and tear, lower efficiency, and higher maintenance costs. Adjust the load on the motor to limit the amount of unnecessary stopping and starting to improve motor performance.

Motor Maintenance

Motors have many moving parts. As these parts degrade over time, the efficiency of the motor is reduced. Routine maintenance prevents damage to motor components. Routine maintenance should include cleaning surfaces and ventilation openings on motors to prevent overheating, lubricating moving parts to reduce friction, inspecting belts and pulleys for wear and to ensure they are at proper alignment and tension, and cleaning and lubricating bearings. Consult a licensed technician to assess these and other motor maintenance strategies.

Fans to Reduce Cooling Load

Install ceiling fans to supplement your cooling system. Thermostat settings can typically be increased by 4°F with no change in overall occupant comfort due to the wind chill effect of moving air.

Thermostat Schedules and Temperature Resets



Use thermostat setback temperatures and schedules to reduce heating and cooling energy use during periods of low or no occupancy. Thermostats should be programmed for a setback of 5-10°F during low occupancy hours (reduce heating setpoints and increase cooling setpoints). Cooling load can be reduced by increasing the facility's occupied setpoint temperature. In general, during the cooling season, thermostats should be set as high as possible without sacrificing occupant comfort.

Economizer Maintenance

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

Periodic inspection and maintenance will keep economizers working in sync with the heating and cooling system. This maintenance should be part of annual system maintenance, and it should include proper setting of the outdoor thermostat/enthalpy control, inspection of control and damper operation, lubrication of damper connections, and adjustment of minimum damper position.

Chiller Maintenance

Service chillers regularly to keep them operating properly. Chillers are responsible for a substantial portion of a commercial building's overall energy usage and when they do not work well, there is usually a noticeable increase in energy bills and increased occupant complaints. Regular diagnostics and service can save five to ten percent of the cost of operating your chiller. If you already have a maintenance contract in place, your existing service company should be able to provide these services.

AC System Evaporator/Condenser Coil Cleaning

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

HVAC Filter Cleaning and Replacement

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

Duct Sealing

Duct leakage in commercial buildings can account for five to twenty-five percent of the supply airflow. In the case of rooftop air handlers, duct leakage can occur to the outside of the building wasting conditioned air. Eliminating duct leaks can improve ventilation system performance and reduce heating and cooling system operation.

Furnace Maintenance

Preventative maintenance can extend the life of the system, maintain energy efficiency, and ensure safe operation. Following the manufacturer's instructions, a yearly tune-up should: check for gas / carbon monoxide leaks; change the air and fuel filters; check components for cracks, corrosion, dirt, or debris build-up; ensure the ignition system is working properly; test and adjust operation and safety controls; inspect electrical connections; and lubricate motors and bearings.

Water Heater Maintenance

Preventative maintenance can extend the life of the system, maintain energy efficiency, and ensure safe operation. At least once a year, follow manufacturer instructions to drain a few gallons out of the water heater using the drain valve. If there is a lot of sediment or debris, then a full flush is recommended. Turn the temperature down and then completely drain the tank. Annual checks should include checks for:

- Leaks or heavy corrosion on the pipes and valves.
- Corrosion or wear on the gas line and on the piping. If you noticed any black residue, soot, or charred metal, this is a sign you may be having combustion issues and you should have the unit serviced by a professional.
- For electric water heaters, look for signs of leaking such as rust streaks or residue around the upper and lower panels covering the electrical components on the tank.
- For water heaters more than three years old, have a technician inspect the sacrificial anode annually.

Compressed Air System Maintenance

Compressed air systems require periodic maintenance to operate at peak efficiency. A maintenance plan for compressed air systems should include:

- Inspection, cleaning, and replacement of inlet filter cartridges
- Cleaning of drain traps
- Daily inspection of lubricant levels to reduce unwanted friction
- Inspection of belt condition and tension
- Check for leaks and adjust loose connections
- Overall system cleaning

Contact a qualified technician for help with setting up periodic maintenance schedule.

Water Conservation



Installing dual flush or low-flow toilets and low-flow/waterless urinals are ways to reduce water use. The EPA WaterSense™ ratings for urinals is 0.5 gallons per flush (gpf) and for flush valve toilets is 1.28 gpf (this is lower than the current 1.6 gpf federal standard).

For more information regarding water conservation go to the EPA's WaterSense™ website⁵ or download a copy of EPA's "WaterSense™ at Work: Best Management Practices for Commercial and Institutional Facilities"⁶ to get ideas for creating a water management plan and best practices for a wide range of water using systems.

Water conservation devices that do not reduce hot water consumption will not provide energy savings at the site level, but they may significantly affect your water and sewer usage costs. 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.

If the facility has detached buildings with a master water meter for the entire campus, check for unnatural wet areas in the lawn or water seeping in the foundation at water pipe penetrations through the foundation. Periodically check overnight meter readings when the facility is unoccupied, and there is no other scheduled water usage.

Manage irrigation systems to use water more effectively outside the building. Adjust spray patterns so that water lands on intended lawns and plantings and not on pavement and walls. Consider installing an evapotranspiration irrigation controller that will prevent over-watering.

Procurement Strategies

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

⁵ <https://www.epa.gov/watersense>

⁶ <https://www.epa.gov/watersense/watersense-work-0>

6 ON-SITE GENERATION

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

Preliminary screenings were performed to determine if an on-site generation measure could be a cost-effective solution for your facility. Before deciding to install an on-site generation system, we recommend conducting a feasibility study to analyze existing energy profiles, siting, interconnection, and the costs associated with the generation project including interconnection costs, departing load charges, and any additional special facilities charges.

6.1 Solar Photovoltaic

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

A preliminary screening based on the facility's electric demand, size and location of free area, and shading elements shows that the facility has **high** potential for installing a PV array.

The amount of free area, ease of installation (location), and the lack of shading elements contribute to the high potential. A PV array located on the roof may be feasible. If you are interested in pursuing the installation of PV, we recommend conducting a full feasibility study.

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

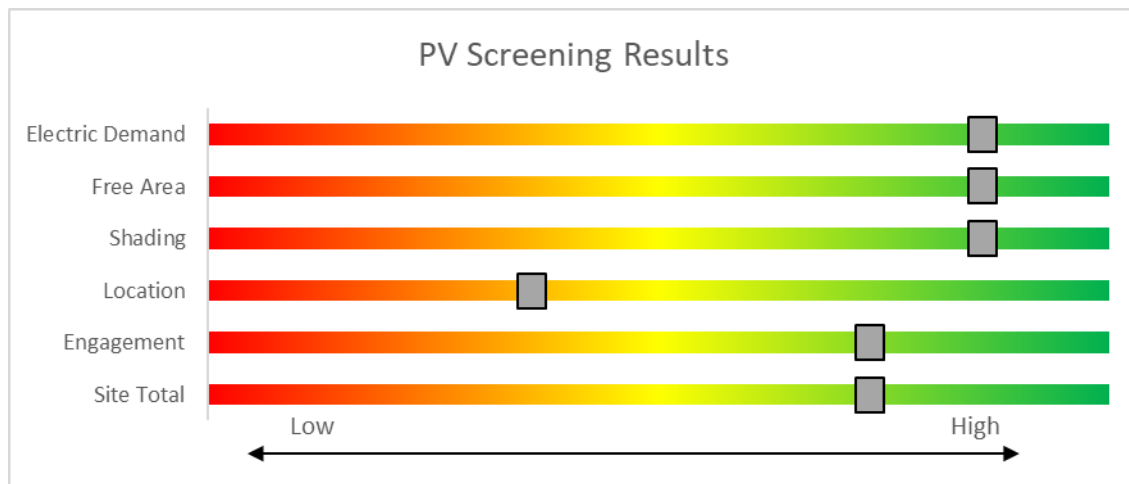


Figure 9 - Photovoltaic Screening

Solar Renewable Energy Credit (SREC) Registration Program

Rebates are not available for solar projects, but owners of solar projects MUST register their projects in the SREC Registration Program before starting construction. Once your PV system is up and running, you periodically earn credits, which can then be sold on the open market for up to 15 years.

If you are considering installing solar photovoltaics on your building, visit www.njcleanenergy.com/srec for more information about the SREC Registration Program.

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

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

6.2 Combined Heat and Power

Combined heat and power (CHP) generates electricity at the facility and puts waste heat energy to good use. Common types of CHP systems are reciprocating engines, microturbines, fuel cells, backpressure steam turbines, and (at large facilities) gas turbines.

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

The key criteria used for screening is the amount of time that the CHP system would operate at full load and the facility's ability to use the recovered heat. Facilities with a continuous need for large quantities of waste heat are the best candidates for CHP.

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

The magnitude, type, and duration of the thermal demand, the coincident electric load, and the ease of interconnection contribute to the potential for CHP at the site. Based on the amount of steam used throughout the year and the concurrent electric demand a Reciprocating Engine may be feasible. If you are interested in pursuing combined heat and power, we recommend performing a detailed feasibility study, which will provide a thorough understanding of the costs and savings associated with this technology.

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

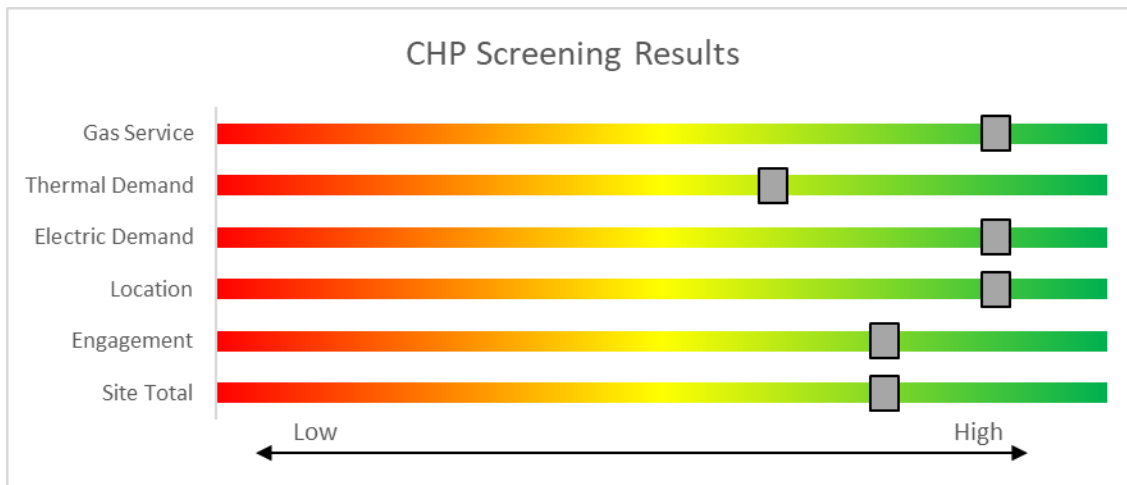


Figure 10 - Combined Heat and Power Screening

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

7 PROJECT FUNDING AND INCENTIVES

Ready to improve your building’s performance? Pick the program that works best for you. Incentive programs that may apply to this facility are identified in the Executive Summary. This section provides an overview of currently available New Jersey’s Clean Energy Programs.

	SmartStart <i>Flexibility to install at your own pace</i>	Direct Install <i>Turnkey installation</i>	Pay for Performance <i>Whole building upgrades</i>
Who should use it?	Buildings installing individual measures or small group of measures.	Small to mid-size facilities that can bundle multiple measures together. Average peak demand should be below 200 kW. Not suitable for significant building shell issues.	Mid to large size facilities looking to implement as many measures as possible at one time. Peak demand should be over 200 kW.
How does it work?	Use in-house staff or your preferred contractor.	Pre-approved contractors pass savings along to you via reduced material and labor costs.	Whole-building approach to energy upgrades designed to reduce energy use by at least 15%. The more you save, the higher the incentives.
What are the Incentives?	Fixed incentives for specific energy efficiency measures.	Incentives pay up to 70% of eligible costs, up to \$125,000 per project. You pay the remaining 30% directly to the contractor.	Up to 25% of installation cost, calculated based on level of energy savings per square foot.
How do I participate?	Submit an application for the specific equipment to be installed.	Contact a participating contractor in your region.	Contact a pre-qualified Partner to develop your Energy Reduction Plan and set your energy savings targets.
Take the next step by visiting www.njcleanenergy.com for program details, applications, and to contact a qualified contractor.			

7.1 SmartStart



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

SmartStart routinely adds, removes, or modifies incentives from year-to-year for various energy efficient 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

Incentives

The SmartStart Prescriptive program provides fixed incentives for specific energy efficiency measures. Prescriptive incentives vary by equipment type.

SmartStart Custom provides incentives for more unique or specialized technologies or systems that are not addressed through prescriptive incentives. Custom incentives are calculated at \$0.16/kWh and \$1.60/therm based on estimated annual savings. Incentives are 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

Submit an application for the specific equipment to be installed. Many applications are designed as rebates, although others require application approval prior to installation. You can work with your preferred contractor or use internal staff to install measures.

Visit www.njcleanenergy.com/SSB for a detailed program description, instructions for applying, and applications.

7.2 Direct Install



Direct Install is a turnkey program available to existing small to medium-sized facilities with an average peak electric demand that does not exceed 200 kW over the recent 12-month period. You work directly with a pre-approved contractor who will perform a free energy assessment at your facility, identify specific eligible measures, and provide a clear scope of work for

installation of selected measures. Energy efficiency measures may include lighting and lighting controls, refrigeration, HVAC, motors, variable speed drives, and controls.

Incentives

The program pays up to 70% of the total installed cost of eligible measures, up to \$125,000 per project. Each entity is limited to incentives up to \$250,000 per fiscal year.

How to Participate

To participate in Direct Install, you will need to contact the participating contractor assigned to the region of the state where your facility is located. A complete list of Direct Install program partners is provided on the Direct Install website linked below. The contractor will be paid the measure incentives directly by the program, which will pass on to you in the form of reduced material and implementation costs. This means up to 70% of eligible costs are covered by the program, subject to program caps and eligibility, while the remaining 30% of the cost is paid to the contractor by the customer.

Detailed program descriptions and applications can be found at: www.njcleanenergy.com/DI.

7.3 Pay for Performance - Existing Buildings



Pay for Performance works for larger customers with a peak demand over 200 kW. The minimum installed scope of work must include at least two unique measures that results in at least 15% source energy savings, and 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 to achieve deep energy savings. This program has an added benefit of addressing measures that may not qualify for other programs. Many facilities pursuing an Energy Savings Improvement Program loan also use this program.

The scope of work presented in this audit report does not quite meet the requirements of the current P4P program. However, due to the size of the facility and existing conditions, should additional measures be identified at a later point in time, for example through further evaluation or the Energy Savings Improvement Program process, this facility could potentially meet the requirements necessary to participate in the P4P program.

Incentives

Incentives are 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

Contact one of the pre-approved consultants and contractors (“Partners”). Under direct contract to you, they will help further evaluate the measures identified in this report through development of the energy reduction plan), assist you in implementing selected measures, and verify actual savings one year after the installation. Your Partner will also help you apply for incentives.

Approval of the final scope of work is required by the program prior to installation. Installation can be done by the contractor of your choice (some P4P Partners are also contractors) or by internal staff, but the Partner remains involved throughout construction to ensure compliance with the program requirements.

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

7.4 Combined Heat and Power

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

Incentives

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

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

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

How to Participate

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

7.5 Energy Savings Improvement Program

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

ESIP provides government agencies in New Jersey with a flexible tool to improve and reduce energy usage with minimal expenditure of new financial resources. NJCEP incentive programs described above can also be used to help further reduce the total project cost of eligible measures.

How to Participate

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

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

After adopting a resolution with a chosen implementation approach, the development of the energy savings plan (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. Carefully consider all alternatives to develop an approach that best meets your needs. A detailed program descriptions and application can be found at: www.njcleanenergy.com/ESIP.

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

7.6 SREC Registration Program

The SREC Registration Program (SRP) is used to register the intent to install solar projects in New Jersey. Rebates are not available for solar projects, but owners of solar projects *must* register their projects prior to the start of construction to establish the project's eligibility to earn SRECs. Registration of the intent to participate in New Jersey's solar marketplace provides market participants with information about the pipeline of anticipated new solar capacity and insight into future SREC pricing.

After the registration is accepted, construction is complete, and final paperwork has been submitted and is deemed complete, the project is issued a New Jersey certification number, which enables it to generate New Jersey SRECs. SREC's are generated once the solar project has been authorized to be energized by the Electric Distribution Company (EDC).

Each time a solar installation generates 1,000 kilowatt-hours (kWh) of electricity, an SREC is earned. Solar project owners report the energy production to the SREC Tracking System. This reporting allows SREC's to be placed in the customer's electronic account. SRECs can then be sold on the SREC Tracking System, providing revenue for the first 15 years of the project's life.

Electricity suppliers, the primary purchasers of SRECs, are required to pay a Solar Alternative Compliance Payment (SACP) if they do not meet the requirements of New Jersey's Solar Renewable Portfolio Standard. Purchasing SRECs can help them meet those requirements. As SRECs are traded in a competitive market, the price may vary significantly. The actual price of an SREC during a trading period fluctuates depending on supply and demand.

Information about the SRP can be found at: www.njcleanenergy.com/srec.

8 ENERGY PURCHASING AND PROCUREMENT STRATEGIES

8.1 Retail Electric Supply Options

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

A list of licensed third-party electric suppliers is available at the NJBPU website⁷.

Retail Natural Gas Supply Options

The natural gas market in New Jersey is also deregulated. Most customers that remain with the utility for natural gas service pay rates that are market-based and that fluctuate monthly. 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 typically depends on whether a customer prefers budget certainty and/or longer-term rate stability. Customers can secure longer-term fixed prices by signing up for service through a third-party retail natural gas supplier. Many larger natural gas customers may seek the assistance of a professional consultant to assist in their procurement process.

If your facility does not already purchase natural gas from a third-party supplier, consider shopping for a reduced rate from third-party natural gas suppliers. If your facility already purchases natural gas from a third-party supplier, review and compare prices at the end of each contract year.

A list of licensed third-party natural gas suppliers is available at the NJBPU website⁸.

⁷ www.state.nj.us/bpu/commercial/shopping.html.

⁸ www.state.nj.us/bpu/commercial/shopping.html

APPENDIX A: EQUIPMENT INVENTORY & RECOMMENDATIONS

Lighting Inventory & Recommendations

Location	Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis								
	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	22	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	22	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.8	6,850	-1	\$1,136	\$803	\$220	0.5
Boiler Room	1	Exit Signs: Incandescent	None		40	8,760		None	No	1	Exit Signs: Incandescent	None	40	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
OR Mechanical Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	1,868	0	\$310	\$219	\$60	0.5
Medical Gas Storage	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Mechanical Room1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.1	623	0	\$103	\$73	\$20	0.5
Mancini Mechanical Room	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	15	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.5	4,670	-1	\$775	\$548	\$150	0.5
Mancini Mechanical Room	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Electrical Room1	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.1	792	0	\$131	\$343	\$20	2.5
Electrical Room2	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.3	2,773	-1	\$460	\$526	\$70	1.0
Fire Pump Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	7	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.3	2,773	-1	\$460	\$526	\$70	1.0
Elevator Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Radiation/Onco Mech Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	2,179	0	\$362	\$256	\$70	0.5
Radiation/Onco Mech Room	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 4420	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Mancini 4th Floor Mech Room	20	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	20	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.7	6,227	-1	\$1,033	\$730	\$200	0.5
Mancini 4th Floor Mech Room	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Mancini 4th Floor Mech Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	2,179	0	\$362	\$256	\$70	0.5
Exterior Wall Pack	7	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Photocell		45	4,380		None	No	7	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Photocell	45	4,380	0.0	0	0	\$0	\$0	\$0	0.0
Room 1349 Mechanical Room	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	2,179	0	\$362	\$256	\$70	0.5
Room 1349 Mechanical Room	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 1240	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Patient Tower Mech Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	6	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	1,868	0	\$310	\$219	\$60	0.5
Patient Tower Mech Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Electrical Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	6	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.3	2,377	-1	\$394	\$489	\$60	1.1

Location	Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis								
	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Mechanical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Electrical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.1	528	0	\$88	\$73	\$20	0.6
Electrical Room	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.5	4,754	-1	\$789	\$708	\$120	0.7
Telephone Closet	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	12	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.5	4,754	-1	\$789	\$708	\$120	0.7
MAP Blg Closet	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	8,736	0.0	274	0	\$45	\$72	\$10	1.4
Patient Rooms - Patient Tower 4th Floor	114	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	114	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	4.0	35,494	-8	\$5,888	\$4,163	\$1,140	0.5
Patient Rooms - Patient Tower 4th Floor	19	Compact Fluorescent: Screw in	Wall Switch	S	23	8,736	2	Relamp	No	19	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.3	2,330	0	\$387	\$327	\$19	0.8
Closet	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
Main Lobby-Patient Tower - 4th Floor	19	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	19	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.4	3,944	-1	\$654	\$958	\$38	1.4
Main Lobby-Patient Tower - 4th Floor	11	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	11	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Hallway	9	Compact Fluorescent: 2PIN	Wall Switch	S	52	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,868	0	\$310	\$454	\$18	1.4
4th Floor Hallway	4	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	4	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.0	415	0	\$69	\$202	\$8	2.8
4th Floor Hallway	20	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	20	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.7	6,227	-1	\$1,033	\$730	\$200	0.5
4th Floor Hallway	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
South Stairwell - Mancini Bldg	22	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	22	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.3	2,283	0	\$379	\$1,110	\$44	2.8
South Stairwell - Mancini Bldg	6	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	6	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.1	906	0	\$150	\$195	\$36	1.1
3rd Floor Hallway	21	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	21	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.7	6,538	-1	\$1,085	\$767	\$210	0.5
3rd Floor Hallway	8	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	8	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,661	0	\$275	\$404	\$16	1.4
3rd Floor Hallway	4	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	4	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.0	415	0	\$69	\$202	\$8	2.8
3rd Floor Hallway	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
3rd Floor Care Management	9	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,868	0	\$310	\$454	\$18	1.4
3rd Floor Care Management	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Patient Rooms - Patient Tower 3rd Floor	114	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	114	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	4.0	35,494	-8	\$5,888	\$4,163	\$1,140	0.5
Patient Rooms - Patient Tower 3rd Floor	19	Compact Fluorescent: Screw in	Wall Switch	S	23	8,736	2	Relamp	No	19	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.3	2,330	0	\$387	\$327	\$19	0.8
Closet	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Main Lobby-Patient Tower - 3rd Floor	19	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	19	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.4	3,944	-1	\$654	\$958	\$38	1.4
Main Lobby-Patient Tower - 3rd Floor	11	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	11	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Patient Rooms - Patient Tower 2nd Floor	114	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	114	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	4.0	35,494	-8	\$5,888	\$4,163	\$1,140	0.5
Patient Rooms - Patient Tower 2nd Floor	19	Compact Fluorescent: Screw in	Wall Switch	S	23	8,736	2	Relamp	No	19	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.3	2,330	0	\$387	\$327	\$19	0.8
Closet	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
2nd Floor Hallway	21	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	21	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.4	3,170	-1	\$526	\$683	\$126	1.1
2nd Floor Hallway	4	Compact Fluorescent: 4PIN	Wall Switch	S	26	8,736	2	Relamp	No	4	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.0	415	0	\$69	\$202	\$8	2.8
2nd Floor Hallway	10	Compact Fluorescent: 2PIN	Wall Switch	S	52	8,736	2	Relamp	No	10	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	2,076	0	\$344	\$504	\$20	1.4
2nd Floor Hallway	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
Over Flow Room	3	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	3	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.1	623	0	\$103	\$151	\$6	1.4
Over Flow Room	6	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	6	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	623	0	\$103	\$303	\$12	2.8
Over Flow Room	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Pharmacy	2	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.0	415	0	\$69	\$101	\$4	1.4
Pharmacy	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
Pharmacy	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 203	2	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.0	415	0	\$69	\$101	\$4	1.4
Mancini Pavilion - 2nd Floor - Hallway	30	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	30	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.7	6,227	-1	\$1,033	\$1,513	\$60	1.4
Mancini Pavilion - 2nd Floor - Hallway	12	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	1,245	0	\$207	\$605	\$24	2.8
Mancini Pavilion - 2nd Floor - Hallway	71	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	71	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	2.5	22,106	-5	\$3,667	\$2,593	\$710	0.5
Trans Care Unit (TCU)	44	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	44	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	1.6	13,699	-3	\$2,273	\$1,607	\$440	0.5
Trans Care Unit (TCU)	55	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	55	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.3	11,416	-2	\$1,894	\$2,774	\$110	1.4
Trans Care Unit (TCU)	22	Incandescent: Flood Light	Wall Switch	S	90	8,736	2	Relamp	No	22	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	13	8,736	1.8	15,983	-3	\$2,651	\$379	\$22	0.1
Trans Care Unit (TCU) - Restroom	11	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	11	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.3	2,283	0	\$379	\$555	\$22	1.4

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Trans Care Unit (TCU) - Restroom	11	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	11	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.2	1,661	0	\$275	\$358	\$66	1.1
Trans Care Unit (TCU) - Restroom	11	Incandescent: Screw in	Wall Switch	S	65	8,736	2	Relamp	No	11	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.6	5,708	-1	\$947	\$189	\$11	0.2
Trans Care Unit (TCU) - Office	3	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	3	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.1	623	0	\$103	\$151	\$6	1.4
Trans Care Unit (TCU) - Restroom	3	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	3	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.1	453	0	\$75	\$98	\$18	1.1
Trans Care Unit (TCU) - Restroom	3	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	3	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.1	623	0	\$103	\$151	\$6	1.4
Trans Care Unit (TCU) - Restroom	2	Incandescent: Screw in	Wall Switch	S	65	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	1,038	0	\$172	\$34	\$2	0.2
Room 2053	46	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	46	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.1	9,548	-2	\$1,584	\$2,320	\$92	1.4
Room 2053	18	Linear Fluorescent - T5HO: 4' T5HO (54W) - 2L	Wall Switch	S	117	8,736	2	Relamp	No	18	LED - Linear Tubes: (2) 4' T5HO (25W) Lamps	Wall Switch	51	8,736	1.3	11,209	-2	\$1,859	\$1,027	\$0	0.6
Room 2053	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Electrical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Roof Electrical Room	10	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	10	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.4	3,114	-1	\$516	\$365	\$100	0.5
Roof Electrical Room	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Roof Electrical Room - Exterior Wall Pack	3	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Photocell		9	4,380		None	No	3	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Photocell	9	4,380	0.0	0	0	\$0	\$0	\$0	0.0
MAP Electrical Closet	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	8,736	0.0	274	0	\$45	\$72	\$10	1.4
Room 303 - MAP	28	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	S	93	8,736	2	Relamp	No	28	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	8,736	1.5	13,077	-3	\$2,169	\$1,534	\$420	0.5
Room 303 - MAP	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 302 - MAP	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	S	93	8,736	2	Relamp	No	8	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	8,736	0.4	3,736	-1	\$620	\$438	\$120	0.5
Room 302 - MAP	5	Compact Fluorescent: Screw in	Wall Switch	S	14	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.0	189	0	\$31	\$86	\$5	2.6
Room 302 - MAP	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 304 - MAP	19	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	19	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	8,736	0.6	5,199	-1	\$862	\$1,377	\$190	1.4
Room 304 - MAP	44	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	S	93	8,736	2	Relamp	No	44	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	8,736	2.3	20,549	-4	\$3,409	\$2,410	\$660	0.5
Room 304 - MAP	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 306 - MAP	10	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	10	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	2,076	0	\$344	\$504	\$20	1.4
Room 306 - MAP	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Room 305 - MAP	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Room 305 -MAP	10	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	10	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	2,076	0	\$344	\$504	\$20	1.4
Waiting Area	21	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	21	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.5	4,359	-1	\$723	\$1,059	\$42	1.4
Waiting Area	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Waiting Area	15	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	15	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.2	1,557	0	\$258	\$757	\$30	2.8
MAP - 3rd Floor Hallway	10	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	10	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	8,736	0.3	2,736	-1	\$454	\$725	\$100	1.4
MAP - 3rd Floor Hallway	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
MAP - 2nd Floor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
MAP - 2nd Floor	9	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	9	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
MAP - 2nd Floor File Room	7	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Occupancy Sensor	S	62	6,028	2	Relamp	No	7	LED - Linear Tubes: (2) U-Lamp	Occupancy Sensor	33	6,028	0.2	1,322	0	\$219	\$507	\$70	2.0
MAP - 2nd Floor	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
MAP - 2nd Floor	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Occupancy Sensor	S	62	6,028	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.0	215	0	\$36	\$37	\$10	0.7
Cardiac Rehab	20	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	20	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	1.2	10,567	-2	\$1,753	\$1,461	\$400	0.6
Cardiac Rehab	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Cardiac Rehab	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Cardiac Rehab - Closet	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	S	114	6,028	2	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.1	729	0	\$121	\$146	\$40	0.9
Cardiac Rehab - Office	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.1	1,057	0	\$175	\$146	\$40	0.6
Lunch Room	5	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2, 3	Relamp	Yes	5	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.4	3,490	-1	\$579	\$635	\$135	0.9
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	S	114	6,028	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.1	365	0	\$60	\$73	\$20	0.9
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.1	792	0	\$131	\$343	\$20	2.5
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	S	114	6,028	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.1	365	0	\$60	\$73	\$20	0.9
Restroom	1	Compact Fluorescent: Screw in	Occupancy Sensor	S	14	6,028	2	Relamp	No	1	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	10	6,028	0.0	26	0	\$4	\$17	\$1	3.8
Storage Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	S	114	6,028	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.1	365	0	\$60	\$73	\$20	0.9
MAP - Recovery Room	15	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Time Switch	S	114	728	2	Relamp	No	15	LED - Linear Tubes: (4) 4' Lamps	Time Switch	58	728	0.9	660	0	\$110	\$1,095	\$300	7.3
MAP - Recovery Room	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Storage Room	22	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Time Switch	S	114	728	2	Relamp	No	22	LED - Linear Tubes: (4) 4' Lamps	Time Switch	58	728	1.3	969	0	\$161	\$1,607	\$440	7.3
Storage Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	S	114	6,028	2	Relamp	No	2	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.1	729	0	\$121	\$146	\$40	0.9
Soiled Utility Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.1	792	0	\$131	\$343	\$55	2.2
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Occupancy Sensor	S	114	6,028	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.1	365	0	\$60	\$73	\$20	0.9
Hallway	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Time Switch	S	114	728	2	Relamp	No	4	LED - Linear Tubes: (4) 4' Lamps	Time Switch	58	728	0.2	176	0	\$29	\$292	\$80	7.3
Stairwell1	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	2,179	0	\$362	\$256	\$70	0.5
Stairwell1	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Stairwell2	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	2,179	0	\$362	\$256	\$70	0.5
Stairwell2	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.1	528	0	\$88	\$73	\$20	0.6
Hyperbaric Medicine	11	Incandescent: Screw in	Wall Switch	S	100	8,736	2	Relamp	No	11	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	1.0	8,822	-2	\$1,463	\$189	\$11	0.1
Hyperbaric Medicine	5	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Hyperbaric Medicine	3	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	3	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.1	623	0	\$103	\$151	\$6	1.4
Oncology	7	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	7	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Oncology - Registration	9	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,868	0	\$310	\$454	\$18	1.4
Oncology - Registration	6	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
1st Floor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
1st Floor Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.1	528	0	\$88	\$73	\$20	0.6
MRI Electrical Room	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
Exterior Walkway Light	7	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Photocell		35	4,380		None	No	7	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Photocell	35	4,380	0.0	0	0	\$0	\$0	\$0	0.0
Parking Lot	19	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Photocell		75	4,380		None	No	19	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Photocell	75	4,380	0.0	0	0	\$0	\$0	\$0	0.0
Ambulatory Bay	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.4	3,736	-1	\$620	\$438	\$120	0.5
Eliiport	10	Incandescent: Screw in	None	S	100	8,736	2	Relamp	No	10	LED Screw-In Lamps: LED Screw-In Lamps	None	15	8,736	0.9	8,020	-2	\$1,330	\$172	\$10	0.1
Main Registration	9	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,868	0	\$310	\$454	\$18	1.4
Main Registration	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Ultrasound	12	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.2	2,038	0	\$338	\$207	\$12	0.6
Room 1	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	302	0	\$50	\$65	\$12	1.1
Room 2	5	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	849	0	\$141	\$86	\$5	0.6
Room 3	5	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	849	0	\$141	\$86	\$5	0.6
Ultrasound	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
MRI Suite	6	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
MRI Suite	2	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.0	396	0	\$66	\$50	\$2	0.7
MRI Suite	5	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	849	0	\$141	\$86	\$5	0.6
Radiology	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Radiology - Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Radiology - Hallway	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	17	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.6	5,293	-1	\$878	\$621	\$170	0.5
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Radiology - Hallway	3	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	3	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	509	0	\$85	\$52	\$3	0.6
Nuclear Medicine	9	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.2	1,783	0	\$296	\$227	\$9	0.7
X-Ray Room	5	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	849	0	\$141	\$86	\$5	0.6
X-Ray Room	7	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.1	1,057	0	\$175	\$228	\$42	1.1
Reading Room	5	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.1	849	0	\$141	\$86	\$5	0.6
Hallway	15	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	15	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.5	4,670	-1	\$775	\$548	\$150	0.5
Cast Scan	21	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	21	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.7	6,538	-1	\$1,085	\$767	\$210	0.5
Cast Scan	6	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	6	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
X-Ray Station	5	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.1	1,038	0	\$172	\$252	\$10	1.4
Closet	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Photocell	S	33	4,380	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Photocell	17	4,380	0.0	76	0	\$13	\$33	\$6	2.1
Hallway	1	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	1	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.0	208	0	\$34	\$50	\$2	1.4
Cat Lab Hallway	12	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	12	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.4	3,736	-1	\$620	\$438	\$120	0.5
Cat Lab Hallway	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Cat Lab Main Area	9	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,868	0	\$310	\$454	\$18	1.4
Cat Lab	31	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	31	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.7	6,435	-1	\$1,067	\$1,564	\$62	1.4
Cat Lab	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Cat Lab	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.1	528	0	\$88	\$73	\$20	0.6
Endo Soiled Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Endo Rooms	19	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	19	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	1.1	10,039	-2	\$1,665	\$1,388	\$380	0.6
Endo Hallway	14	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	14	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.5	4,359	-1	\$723	\$511	\$140	0.5
Endo Hallway	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Restroom	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
Endo Rooms	8	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	8	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.2	1,359	0	\$225	\$138	\$8	0.6
Cardiology	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Cardiology	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Cardiology	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	8,736	0.0	274	0	\$45	\$72	\$10	1.4
Cardiology	8	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	8	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,661	0	\$275	\$404	\$16	1.4
Restroom	1	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	1	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.0	170	0	\$28	\$17	\$1	0.6
ED Hallway	8	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
ED Hallway	12	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.3	2,378	-1	\$394	\$303	\$12	0.7
ED Hallway	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.3	2,491	-1	\$413	\$292	\$80	0.5
ED Hallway	26	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	26	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	1.0	8,954	-2	\$1,485	\$853	\$0	0.6
ED Hallway	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
ED Office	20	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	20	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.5	3,963	-1	\$657	\$504	\$20	0.7
ED Office	7	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	7	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Pediatric Area	12	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.3	2,378	-1	\$394	\$303	\$12	0.7
Pediatric Area	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Pediatric Area	3	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	3	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.1	1,033	0	\$171	\$98	\$0	0.6

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Decontamination Area	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Decontamination Area	4	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	4	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.1	604	0	\$100	\$130	\$24	1.1
ED Part B	10	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	10	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.2	1,981	0	\$329	\$252	\$10	0.7
ED Part B	10	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	10	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.4	3,444	-1	\$571	\$328	\$0	0.6
ED Part B	7	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	7	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Rooms	50	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	50	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.2	10,378	-2	\$1,722	\$2,522	\$100	1.4
ED Part B Reception Area	51	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	51	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.2	10,586	-2	\$1,756	\$2,572	\$102	1.4
ED Part B Reception Area	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
ED Part B Reception Area	2	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	2	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.1	689	0	\$114	\$66	\$0	0.6
ED Part B Reception Area	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	302	0	\$50	\$65	\$12	1.1
ED Part A	12	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.3	2,378	-1	\$394	\$303	\$12	0.7
ED Part A	5	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
ED Part A	4	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	4	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.2	1,377	0	\$229	\$131	\$0	0.6
ED Part A Reception Area	51	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	51	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.2	10,586	-2	\$1,756	\$2,572	\$102	1.4
ED Part A Reception Area	7	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.3	2,411	-1	\$400	\$230	\$0	0.6
Behavior Health	7	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	7	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.2	1,387	0	\$230	\$177	\$7	0.7
Behavior Health - Room	6	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	S	93	8,736	2	Relamp	No	6	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	8,736	0.3	2,802	-1	\$465	\$329	\$90	0.5
Behavior Health - Room	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Behavior Health - Room	9	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	9	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.4	3,099	-1	\$514	\$295	\$0	0.6
Restroom	1	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	1	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.0	198	0	\$33	\$25	\$1	0.7
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Soiled Utility Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
ED Main Hallway	11	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	11	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.4	3,425	-1	\$568	\$402	\$110	0.5
ED Main Hallway	2	Linear Fluorescent - T5HO: 4' T5HO (54W) - 1L	Wall Switch	S	62	8,736	2	Relamp	No	2	LED - Linear Tubes: (1) 4' T5HO (25W) Lamp	Wall Switch	26	8,736	0.1	689	0	\$114	\$66	\$0	0.6
ED Main Hallway	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0

Existing Conditions							Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Electric Closet	8	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2, 3	Relamp	Yes	8	LED - Linear Tubes: (2) 2' Lamps	Occupancy Sensor	17	6,028	0.2	1,605	0	\$266	\$530	\$48	1.8
Communication Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.1	792	0	\$131	\$343	\$20	2.5
Locker Room	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	2	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.1	792	0	\$131	\$343	\$55	2.2
Locker Room	2	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.0	396	0	\$66	\$50	\$2	0.7
Mechanical Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Clean Side	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	9	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.3	2,802	-1	\$465	\$329	\$90	0.5
Clean Side	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
SDS	8	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
SDS	34	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	34	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	1.2	10,586	-2	\$1,756	\$1,242	\$340	0.5
SDS	6	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	6	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.1	1,189	0	\$197	\$151	\$6	0.7
IV Prep Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	9	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.3	2,802	-1	\$465	\$329	\$90	0.5
OR Main Area	7	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	7	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.2	2,179	0	\$362	\$256	\$70	0.5
OR Main Area	5	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
OR Hallway	12	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	12	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.7	6,340	-1	\$1,052	\$876	\$240	0.6
OR Core	17	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	17	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.6	5,293	-1	\$878	\$621	\$170	0.5
OR Core	4	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	4	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.2	2,113	0	\$351	\$292	\$80	0.6
OR Rooms	48	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	48	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	2.9	25,361	-5	\$4,207	\$3,505	\$960	0.6
OR Core	1	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	151	0	\$25	\$33	\$6	1.1
OR Storage	7	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2, 3	Relamp	Yes	7	LED - Linear Tubes: (4) 4' Lamps	Occupancy Sensor	58	6,028	0.6	4,886	-1	\$811	\$781	\$140	0.8
Anesthesia Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	3	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.2	1,585	0	\$263	\$219	\$60	0.6
Recovery Room	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Recovery Room	8	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	8	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.3	2,491	-1	\$413	\$292	\$80	0.5
Restroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
OR Locker Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2, 3	Relamp	Yes	9	LED - Linear Tubes: (2) 4' Lamps	Occupancy Sensor	29	6,028	0.4	3,566	-1	\$591	\$599	\$125	0.8
Shower Room	2	Compact Fluorescent: Screw in	Wall Switch	S	23	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.0	245	0	\$41	\$34	\$2	0.8

		Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
OR Hallway	4	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	4	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.1	1,245	0	\$207	\$146	\$40	0.5
OR Hallway	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Hallway	4	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	4	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.0	415	0	\$69	\$202	\$8	2.8
Hallway	7	Halogen Incandescent: 2PIN	Wall Switch	S	250	8,736	2	Relamp	No	7	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	35	8,736	1.6	14,199	-3	\$2,356	\$246	\$7	0.1
Storage Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Chapel	1	Linear Fluorescent - T8: 4' T8 (32W) - 4L	Wall Switch	S	114	8,736	2	Relamp	No	1	LED - Linear Tubes: (4) 4' Lamps	Wall Switch	58	8,736	0.1	528	0	\$88	\$73	\$20	0.6
Chapel	1	Compact Fluorescent: 4PIN	Wall Switch	S	42	8,736	2	Relamp	No	1	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	21	8,736	0.0	198	0	\$33	\$25	\$1	0.7
Chapel	8	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2	Relamp	No	8	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	10	8,736	0.2	1,359	0	\$225	\$138	\$8	0.6
HR Lobby	2	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	2	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.0	415	0	\$69	\$101	\$4	1.4
Office	2	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2,3	Relamp	Yes	2	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	15	6,028	0.0	295	0	\$49	\$371	\$39	6.8
Office	3	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	3	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Conference Room	11	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2,3	Relamp	Yes	11	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	10	6,028	0.2	2,190	0	\$363	\$459	\$46	1.1
Main Conference Room	26	Compact Fluorescent: Screw in	Wall Switch	S	28	8,736	2,3	Relamp	Yes	26	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	10	6,028	0.6	5,176	-1	\$859	\$988	\$96	1.0
Cafeteria Hall	4	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	4	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria Hall	19	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	19	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.4	3,944	-1	\$654	\$958	\$38	1.4
Cafeteria Hall	20	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	20	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.7	6,227	-1	\$1,033	\$730	\$200	0.5
Cafeteria Hall	4	Compact Fluorescent: 2PIN	Wall Switch		26	8,736	2	Relamp	No	4	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.0	415	0	\$69	\$202	\$8	2.8
Medical Library	13	Compact Fluorescent: 4PIN	Wall Switch		52	8,736	2,3	Relamp	Yes	13	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	30	6,028	0.4	3,839	-1	\$637	\$1,196	\$96	1.7
Dr Lunch Room	11	Compact Fluorescent: 4PIN	Wall Switch		52	8,736	2,3	Relamp	Yes	11	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	30	6,028	0.4	3,248	-1	\$539	\$825	\$57	1.4
Dr Shower Room	2	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch		33	8,736	2	Relamp	No	2	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.0	302	0	\$50	\$65	\$12	1.1
Dr Bedroom	5	Compact Fluorescent: 4PIN	Wall Switch		52	8,736	2,3	Relamp	Yes	5	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	30	6,028	0.2	1,477	0	\$245	\$522	\$45	1.9
Dr Bedroom	4	Incandescent: Screw in	Wall Switch		60	8,736	2,3	Relamp	Yes	4	LED Screw-In Lamps: LED Screw-In Lamps	Occupancy Sensor	10	6,028	0.2	2,004	0	\$332	\$339	\$39	0.9
Cafeteria	82	Compact Fluorescent: 4PIN	Wall Switch		52	8,736	2	Relamp	No	82	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.9	17,021	-4	\$2,824	\$4,136	\$164	1.4
Cafeteria	39	Linear Fluorescent - T5: 4' T5 (28W) - 2L	Wall Switch		60	8,736	2	Relamp	No	39	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	1.3	11,407	-2	\$1,892	\$1,424	\$390	0.5

		Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis							
Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Cafeteria	7	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	7	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria Entrance	7	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	7	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.2	1,453	0	\$241	\$353	\$14	1.4
Cafeteria Entrance	1	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	1	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Exterior Recessed	7	Halogen Incandescent: PAR38	Timeclock	S	90	4,860	2	Relamp	No	7	LED Screw-In Lamps: LED Screw-In Lamps	Timeclock	15	4,860	0.4	2,552	0	\$428	\$121	\$7	0.3
Emergency Entrance	42	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Timeclock	S	62	4,860	2	Relamp	No	42	LED - Linear Tubes: (2) 4' Lamps	Timeclock	29	4,860	1.1	6,736	0	\$1,130	\$1,534	\$420	1.0
Exterior Wall Pack	21	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Timeclock	S	9	4,860		None	No	21	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Timeclock	9	4,860	0.0	0	0	\$0	\$0	\$0	0.0
Exterior Wall Washer	5	LED - Fixtures: High-Bay	Timeclock	S	200	4,860		None	No	5	LED - Fixtures: High-Bay	Timeclock	200	4,860	0.0	0	0	\$0	\$0	\$0	0.0
Exterior Flag Light	4	LED - Fixtures: High-Bay	Timeclock	S	135	4,860		None	No	4	LED - Fixtures: High-Bay	Timeclock	135	4,860	0.0	0	0	\$0	\$0	\$0	0.0
Exterior Loading Dog	2	Metal Halide: (1) 150W Lamp	Timeclock	S	190	4,860	1	Fixture Replacement	No	2	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Timeclock	52	4,860	0.2	1,341	0	\$225	\$1,932	\$200	7.7
Exterior Loading Dog Wall Pack	1	High-Pressure Sodium: (1) 100W Lamp	Timeclock	S	138	4,860	1	Fixture Replacement	No	1	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Timeclock	45	4,860	0.1	452	0	\$76	\$966	\$100	11.4
Closet	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.0	311	0	\$52	\$37	\$10	0.5
Kitchen	12	Linear Fluorescent - T5HO: 4' T5HO (54W) - 2L	Wall Switch	S	117	8,736	2	Relamp	No	12	LED - Linear Tubes: (2) 4' T5HO (25W) Lamps	Wall Switch	51	8,736	0.8	7,472	-2	\$1,240	\$685	\$0	0.6
Room 1103	37	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	37	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.9	7,680	-2	\$1,274	\$1,866	\$74	1.4
Room 1103	8	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	8	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	830	0	\$138	\$404	\$16	2.8
Room 1103	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Mancini Pavilion - 4th Floor - Hallway	67	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	67	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.6	13,907	-3	\$2,307	\$3,379	\$134	1.4
Mancini Pavilion - 4th Floor - Hallway	11	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	11	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	1,142	0	\$189	\$555	\$22	2.8
Mancini Pavilion - 4th Floor - Hallway	5	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	5	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Mancini Pavilion - 4th Floor - Patient Rooms	54	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	54	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	1.3	11,209	-2	\$1,859	\$2,724	\$108	1.4
Mancini Pavilion - 4th Floor - Patient Rooms	72	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	72	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	2.5	22,417	-5	\$3,719	\$2,629	\$720	0.5
Mancini Pavilion - 4th Floor - Patient Rooms	90	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	90	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	1.1	9,341	-2	\$1,549	\$4,540	\$180	2.8
Mancini Pavilion - 4th Floor - Patient Rooms	18	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	18	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.3	2,717	-1	\$451	\$585	\$108	1.1
North Stairwell	2	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	2	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	0.1	623	0	\$103	\$73	\$20	0.5
North Stairwell	11	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	11	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	1,142	0	\$189	\$555	\$22	2.8
Mancini Pavilion - 3rd Floor - Hallway	8	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	8	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0

Location	Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis								
	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Mancini Pavilion - 3rd Floor - Hallway	12	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.3	2,491	-1	\$413	\$605	\$24	1.4
Mancini Pavilion - 3rd Floor - Hallway	5	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	5	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	519	0	\$86	\$252	\$10	2.8
Mancini Pavilion - 3rd Floor - Hallway	28	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	S	62	8,736	2	Relamp	No	28	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	8,736	1.0	8,718	-2	\$1,446	\$1,022	\$280	0.5
Waiting Room	12	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	12	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.3	2,491	-1	\$413	\$605	\$24	1.4
CCU Main Area	9	Compact Fluorescent: 2PIN	Wall Switch	S	26	8,736	2	Relamp	No	9	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	15	8,736	0.1	934	0	\$155	\$454	\$18	2.8
CCU Main Area	2	Exit Signs: LED - 2 W Lamp	None		6	8,760		None	No	2	Exit Signs: LED - 2 W Lamp	None	6	8,760	0.0	0	0	\$0	\$0	\$0	0.0
Mancini Pavilion - 3rd Floor - Patient Rooms	36	Compact Fluorescent: 4PIN	Wall Switch	S	52	8,736	2	Relamp	No	36	LED Screw-In Lamps: LED Screw-In Lamps	Wall Switch	30	8,736	0.8	7,472	-2	\$1,240	\$1,816	\$72	1.4
Mancini Pavilion - 3rd Floor - Patient Rooms	12	Linear Fluorescent - T8: 2' T8 (17W) - 2L	Wall Switch	S	33	8,736	2	Relamp	No	12	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	8,736	0.2	1,811	0	\$301	\$390	\$72	1.1
Mancini Pavilion - 3rd Floor - Patient Rooms	12	Linear Fluorescent - T8: 2' T8 (17W) - 4L	Wall Switch	S	63	8,736	2	Relamp	No	12	LED - Linear Tubes: (4) 2' Lamps	Wall Switch	34	8,736	0.4	3,283	-1	\$545	\$780	\$144	1.2
Main Lobby-Patient Tower - 4th Floor	34	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	34	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 4th Floor	38	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	38	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 4th Floor	15	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	15	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Hallway	33	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	33	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Hallway	39	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	39	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Hallway	18	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	18	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 3rd Floor	37	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	37	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 3rd Floor	34	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	34	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 3rd Floor	21	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	21	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
3rd Floor Hallway	57	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	57	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
3rd Floor Hallway	37	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	37	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
3rd Floor Hallway	21	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	21	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Patient Rooms - Patient Tower 4th Floor	25	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	25	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Hallway	27	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	27	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Patient Rooms - Patient Tower 3rd Floor	34	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	34	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 3rd Floor	32	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	32	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0

Location	Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis								
	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Main Lobby-Patient Tower - 3rd Floor	47	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	47	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 3rd Floor	7	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	7	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
2nd Floor Hallway	49	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	49	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
2nd Floor Hallway	42	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	42	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
2nd Floor Hallway	18	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	18	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby-Patient Tower - 2nd Floor	37	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	37	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
CCU Main Area	51	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	51	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
CCU Main Area	41	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	41	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
CCU Main Area	22	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	22	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Over Flow Room	12	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	12	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Over Flow Room	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Pharmacy	35	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	35	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Pharmacy	38	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	38	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Mancini Pavilion - 2nd Floor - Hallway	26	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	26	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Mancini Pavilion - 2nd Floor - Hallway	43	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	43	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Trans Care Unit (TCU)	31	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	31	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Trans Care Unit (TCU)	38	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	38	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Trans Care Unit (TCU) - Office	15	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	15	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Room 2053	18	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	18	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Room 2053	15	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	15	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Room 203	5	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	5	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Hyperbaric Medicine	24	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	24	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Hyperbaric Medicine	37	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	37	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Oncology	31	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	31	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Oncology - Registration	29	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	29	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0

Location	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Oncology - Registration	27	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	27	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Ultrasound	19	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	19	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
MRI Suite	12	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	12	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
MRI Suite	19	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	19	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Radiology	28	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	28	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Radiology - Hallway	21	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	21	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Radiology - Hallway	25	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	25	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Nuclear Medecine	19	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	19	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
X-Ray Room	14	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	14	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
X-Ray Room	24	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	24	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Reading Room	9	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	9	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Hallway	14	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	14	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
X-Ray Station	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Hallway	9	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	9	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cat Lab Hallway	12	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	12	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cat Lab Hallway	27	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	27	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cat Lab Main Area	44	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	44	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Endo Hallway	31	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	31	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Endo Hallway	18	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	18	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cardiology	41	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	41	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cardiology	33	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	33	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cardiology	21	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	21	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Hallway	29	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	29	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Hallway	27	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	27	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Hallway	14	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	14	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0

Location	Existing Conditions						Proposed Conditions						Energy Impact & Financial Analysis								
	Fixture Quantity	Fixture Description	Control System	Light Level	Watts per Fixture	Annual Operating Hours	ECM #	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
ED Office	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Office	9	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	9	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Pediatric Area	35	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	35	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Pediatric Area	18	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	18	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Decontamination Area	33	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	33	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Decontamination Area	22	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	22	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Behavior Health	11	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	11	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Main Hallway	15	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	15	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Main Hallway	24	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	24	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
ED Main Hallway	12	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	12	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
SDS	24	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	24	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
SDS	13	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	13	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
OR Main Area	16	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	16	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
OR Hallway	23	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	23	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
OR Hallway	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	21	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
OR Hallway	11	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	11	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Main Lobby	27	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	S	36	8,736		None	No	27	LED - Fixtures: Ambient 2x4 Fixture	Wall Switch	36	8,736	0.0	0	0	\$0	\$0	\$0	0.0
HR Lobby	14	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	14	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria Hall	22	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	22	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria Hall	11	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	11	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Radiology - Hallway	17	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	S	60	8,736		None	No	17	LED - Fixtures: Ambient 1x4 Fixture	Wall Switch	60	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Medical Library	9	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	9	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Dr Lunch Room	4	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	4	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
CCU Main Area	26	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	26	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0
Pharmacy	24	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	S	28	8,736		None	No	24	LED - Fixtures: Ambient 2x2 Fixture	Wall Switch	28	8,736	0.0	0	0	\$0	\$0	\$0	0.0

Motor Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
		Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	Combustion Air	2	Combustion Air Fan	7.5	85.5%	No	W	3,391		No	85.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Feed Water Pumps	3	Boiler Feed Water Pump	10.0	85.5%	No	B	3,391	4, 8	Yes	89.5%	Yes	3	15.5	35,963	0	\$6,035	\$15,818	\$3,600	2.0
Boiler Room	Hot Water System	2	Heating Hot Water Pump	7.5	84.5%	No	B	3,391	4, 7	Yes	91.0%	Yes	2	1.9	19,005	0	\$3,189	\$9,476	\$0	3.0
Boiler Room	Endo-Maternity-OR	2	Heating Hot Water Pump	7.5	84.0%	No	B	3,391	4, 7	Yes	91.0%	Yes	2	2.0	19,285	0	\$3,236	\$9,476	\$0	2.9
Boiler Room	Condensate System	2	Condensate Pump	1.0	75.5%	No	W	2,745		No	75.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Medical Compressed Air	4	Air Compressor	5.0	89.5%	No	W	6,978		No	89.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Hot Water System	2	Heating Hot Water Pump	10.0	91.7%	No	W	3,391		No	91.7%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Condensate System	2	Condensate Pump	1.0	72.0%	No	W	2,745		No	72.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Compressed Air-Pneumatic Control	2	Air Compressor	3.0	89.5%	No	W	6,978		No	89.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Condensate System	2	Condensate Pump	0.3	65.0%	No	W	2,745		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Domestic Hot Water Recirculation Pump	1	Process Pump	0.1	60.0%	No	W	4,368		No	60.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Domestic Hot Water Recirculation Pump	1	Process Pump	0.3	65.0%	No	W	4,368		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Medical Vacuum Compressed Air	4	Process Pump	7.5	84.0%	No	W	3,391		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Air Handler Unit - AHU3 - SPD/Surgery Rooms	1	Supply Fan	1.5	86.5%	No	W	2,745		No	86.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Boiler Room	Domestic Hot Water Recirculation Pump	1	Process Pump	0.3	65.0%	No	W	2,745		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
O.R Mechanical Room	Operating Rooms	2	Chilled Water Pump	2.0	78.0%	No	B	2,745	4, 6	Yes	86.5%	Yes	2	0.9	4,635	0	\$778	\$6,522	\$0	8.4
O.R Mechanical Room	Same Day Surgery/Waiting Area (AHU2)	1	Supply Fan	2.0	84.0%	No	W	2,745	4, 5	Yes	86.5%	Yes	1	0.6	1,923	0	\$323	\$3,623	\$160	10.7
Mechanical Room 1	O.R Medical Vacuum	2	Process Pump	5.0	86.5%	No	W	8,760		No	86.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Mechanical Room 1	Operating Rooms (AHU1)	1	Supply Fan	2.0	86.5%	No	W	8,760	4, 5	Yes	86.5%	Yes	1	0.6	4,066	0	\$682	\$3,623	\$160	5.1
Mechanical Room 1	Condensate System	2	Condensate Pump	1.0	84.0%	No	W	2,745		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Mechanical Room 1	Chilled Water	1	Chilled Water Pump	5.0	90.2%	No	W	2,745	4, 6	Yes	90.2%	Yes	1	0.9	4,257	0	\$714	\$4,076	\$0	5.7
Mancini Mechanical Room	Mancini Tower	2	Heating Hot Water Pump	5.0	89.5%	No	W	2,745	4, 7	Yes	89.5%	Yes	2	1.0	8,580	0	\$1,440	\$8,152	\$0	5.7
Mancini Mechanical Room	Domestic Hot Water Recirculation Pump - Patient Tower	2	Process Pump	7.5	84.0%	No	W	8,760		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Mancini Mechanical Room	Patient Tower	2	Heating Hot Water Pump	20.0	91.5%	No	B	8,760	4, 7	Yes	93.0%	Yes	2	4.1	65,030	0	\$10,913	\$17,164	\$0	1.6
Mancini Mechanical Room	Mancini Mechanical Room	1	Exhaust Fan	5.0	84.0%	No	W	3,276	4, 5	Yes	89.5%	Yes	1	1.6	6,059	0	\$1,017	\$4,076	\$400	3.6
Mancini Mechanical Room	AHU3 - Dining Area	1	Supply Fan	20.0	86.5%	No	W	8,760	4, 5	Yes	93.0%	Yes	1	6.3	47,788	0	\$8,019	\$8,850	\$1,600	0.9
Mancini Mechanical Room	AHU3 - Dining Area	1	Return Fan	0.5	65.0%	No	W	8,760	4, 5	Yes	78.2%	Yes	1	0.2	1,467	0	\$246	\$2,696	\$40	10.8
Mancini Mechanical Room	AHU3 - Dining Area	1	Return Fan	5.0	84.0%	No	W	8,760	4, 5	Yes	89.5%	Yes	1	1.6	10,554	0	\$1,771	\$4,076	\$400	2.1
Mancini Mechanical Room	Condensate System	2	Condensate Pump	0.8	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Mancini Mechanical Room	AHU1 - Lower Level	1	Supply Fan	10.0	89.5%	No	W	8,760	4, 5	Yes	91.7%	Yes	1	3.0	21,512	0	\$3,610	\$5,375	\$800	1.3
Mancini Mechanical Room	AHU1 - Lower Level	1	Return Fan	3.0	86.5%	No	W	8,760	4, 5	Yes	89.5%	Yes	1	0.9	5,877	0	\$986	\$3,884	\$240	3.7
Mancini Mechanical Room	AHU2 - Room 103	1	Supply Fan	7.5	89.5%	No	W	8,760	4, 5	Yes	91.7%	Yes	1	2.2	16,134	0	\$2,707	\$4,761	\$600	1.5
Mancini Mechanical Room	AHU2 - Room 103	1	Return Fan	1.5	84.0%	No	W	8,760	4, 5	Yes	86.5%	Yes	1	0.5	2,910	0	\$488	\$3,391	\$120	6.7
Mancini Mechanical Room	Sump Pumps	2	Process Pump	1.0	82.0%	No	W	2,745		No	82.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Elevator Room	Elevator 6	1	Process Pump	40.0	78.5%	No	W	4,067		No	78.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Elevator Room	Elevator 7 and 8	2	Process Pump	50.0	80.0%	No	W	4,067		No	80.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Elevator Room	Elevator Room	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Fire Pump Room	Condensate System	2	Condensate Pump	2.0	80.0%	No	W	2,745		No	80.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Fire Pump Room	Medical Vacuum Compressed Air	2	Process Pump	5.0	84.0%	No	W	2,745		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Fire Pump Room	Medical Vacuum Compressed Air	4	Process Pump	5.0	80.5%	No	W	2,745		No	80.5%	No		0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Electrical Room	Elevator 3 and 4	2	Process Pump	45.0	80.0%	No	W	4,067		No	80.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Electrical Room	Elevator 3 and 4	1	Process Blower	0.5	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Radiology/Oncology Mech Room	Radiology/Oncology (AHU1)	1	Supply Fan	10.0	89.5%	No	W	3,391	4, 5	Yes	91.7%	Yes	1	3.0	11,057	0	\$1,855	\$5,375	\$800	2.5
Radiology/Oncology Mech Room	Radiology/Oncology (AHU1)	1	Return Fan	3.0	82.0%	No	W	2,745	4, 5	Yes	89.5%	Yes	1	1.0	3,233	0	\$543	\$3,812	\$240	6.6
4th Floor Mech Room	Chilled Water	2	Chilled Water Pump	40.0	93.0%	No	W	4,067	4, 6	Yes	94.1%	Yes	2	15.2	99,930	0	\$16,769	\$26,744	\$4,800	1.3
4th Floor Mech Room	Medical Vacuum Compressed Air	2	Process Pump	10.0	89.5%	No	W	3,391		No	89.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Mech Room	Medical Vacuum Compressed Air	2	Process Pump	10.0	88.5%	No	W	3,391		No	88.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Mech Room	AHU8	1	Supply Fan	25.0	86.5%	Yes	W	8,760	4	Yes	93.6%	No		0.9	10,745	0	\$1,803	\$3,468	\$0	1.9
4th Floor Mech Room	AHU8	1	Return Fan	7.5	88.5%	Yes	W	8,760		No	88.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Mech Room	AHU6	1	Supply Fan	20.0	86.5%	Yes	W	8,760		No	86.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Mech Room	AHU6	1	Return Fan	5.0	85.5%	Yes	W	8,760		No	85.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Mech Room	AHU7	1	Supply Fan	20.0	86.5%	Yes	W	8,760		No	86.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
4th Floor Mech Room	AHU7	1	Return Fan	5.0	85.5%	Yes	W	8,760		No	85.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Mancini (EF 4,7,8,13) - Clinical Areas	4	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Mancini Tower	3	Exhaust Fan	0.3	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Kitchen	1	Kitchen Hood Exhaust Fan	3.0	86.5%	No	W	8,760	4, 9	Yes	89.5%	Yes	1	0.1	16,741	200	\$4,612	\$3,812	\$900	0.6
Roof Top	EF (4,6)	2	Exhaust Fan	0.3	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Kitchen - EF1,2	2	Exhaust Fan	0.8	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Kitchen	1	Exhaust Fan	0.3	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Restroom EF10	1	Exhaust Fan	0.3	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof Top	Pharmacy EF9	1	Exhaust Fan	0.3	65.0%	No	W	8,760		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Room 1349	AHU5	1	Supply Fan	7.5	88.5%	Yes	W	8,760		No	88.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Room 1349	AHU5	1	Return Fan	3.0	84.0%	Yes	W	8,760		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Room 1349	AHU4	1	Supply Fan	3.0	84.0%	Yes	W	8,760		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Room 1349	AHU4	1	Return Fan	1.5	82.0%	Yes	W	8,760		No	82.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Patient Tower	1	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Patient Tower - Temtrol Unit - AHU1	1	Supply Fan	50.0	86.0%	No	B	4,067	4, 5	Yes	94.5%	Yes	1	16.2	76,858	0	\$12,897	\$17,866	\$4,000	1.1
Roof Top	Patient Tower - Temtrol Unit	1	Return Fan	20.0	86.0%	No	B	3,391	4, 5	Yes	93.0%	Yes	1	6.6	25,050	0	\$4,204	\$8,850	\$1,600	1.7
Patien Tower Mech Room	Patient Tower	2	Heating Hot Water Pump	3.0	81.5%	No	W	2,745	4, 7	Yes	89.5%	Yes	2	0.8	6,563	0	\$1,101	\$7,768	\$0	7.1
Patien Tower Mech Room	Patient Tower	2	Air Compressor	5.0	90.2%	No	W	6,978		No	90.2%	No		0.0	0	0	\$0	\$0	\$0	0.0
Patien Tower Mech Room	Patient Tower	2	Chilled Water Pump	3.0	81.5%	No	B	2,745	4, 6	Yes	89.5%	Yes	2	1.4	6,563	0	\$1,101	\$7,768	\$0	7.1
Patien Tower Mech Room	Patient Tower	3	Heating Hot Water Pump	3.0	78.5%	No	B	2,745	4, 7	Yes	89.5%	Yes	3	1.4	10,752	0	\$1,804	\$11,652	\$0	6.5
Patien Tower Mech Room	AHU1	1	Chilled Water Pump	7.5	86.5%	No	B	3,391	4, 6	Yes	91.0%	Yes	1	1.5	8,957	0	\$1,503	\$4,738	\$0	3.2
Patien Tower Mech Room	Reheat Coils	2	Heating Hot Water Pump	2.0	82.0%	No	W	2,745	4, 7	Yes	86.5%	Yes	2	0.5	4,097	0	\$687	\$6,522	\$0	9.5
Patien Tower Mech Room	Hot Water System - East Zone	2	Heating Hot Water Pump	10.0	89.5%	No	W	3,391	4, 7	Yes	91.7%	Yes	2	2.1	22,114	0	\$3,711	\$10,303	\$0	2.8
Patien Tower Mech Room	Patien Tower Mech Room	1	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Patien Tower Mech Room	Domestic Hot Water Recirculation	1	Process Pump	0.3	65.0%	No	W	2,745		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Elevator Room	Elevator 1 and 2	2	Process Pump	25.0	80.0%	No	W	4,067		No	80.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Electrical Room	Compressed Air	1	Air Compressor	5.0	84.0%	No	W	6,978		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	E.D - AHU1	1	Supply Fan	50.0	92.5%	Yes	W	4,067		No	92.5%	No		0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof Top	E.D - AHU1	1	Return Fan	15.0	88.5%	Yes	W	3,391		No	88.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	E.D - AHU2	1	Supply Fan	40.0	92.5%	Yes	W	4,067		No	92.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	E.D - AHU2	1	Supply Fan	25.0	92.5%	Yes	W	4,067		No	92.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Restroom/Mech Room	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Same Day Surgery	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	ED	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	ED	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	ED	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	SPD	1	Exhaust Fan	1.0	84.0%	No	W	3,276	4, 5	Yes	85.5%	Yes	1	0.3	1,125	0	\$189	\$3,283	\$80	17.0
Roof Top	OR Storage Room	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	ER	1	Exhaust Fan	1.5	84.0%	No	W	3,276		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Restrooms	4	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	ED	1	Exhaust Fan	3.0	84.0%	No	W	3,276	4, 5	Yes	89.5%	Yes	1	1.0	3,635	0	\$610	\$3,812	\$240	5.9
Roof Top	ED	1	Exhaust Fan	2.0	84.0%	No	W	3,276	4, 5	Yes	86.5%	Yes	1	0.6	2,296	0	\$385	\$3,623	\$160	9.0
Roof Top	Radiology	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Nuclear Mdecine	3	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Mamographie	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Lunch Room - Radiology	1	Exhaust Fan	0.1	60.0%	No	W	3,276		No	60.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof Top	Restroom	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	MRI Restroom/SPD	3	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	Mechanical Room	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Boiler Room	1	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Boiler Room	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Cleaning Room	1	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Maternity	1	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Restroom	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Staiwell/Restroom	3	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Maternity	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Cat Lab	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Maternity Restroom	1	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Endo/Hallway	2	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Main Hallway	2	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Main Lab	1	Exhaust Fan	5.0	82.0%	No	W	3,276	4, 5	Yes	89.5%	Yes	1	1.7	6,431	0	\$1,079	\$4,197	\$400	3.5
Roof	Restroom/Shop	2	Exhaust Fan	0.3	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Restroom-MAP	4	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Oncology	1	Exhaust Fan	1.0	82.0%	No	W	3,276	4, 5	Yes	85.5%	Yes	1	0.3	1,200	0	\$201	\$3,283	\$80	15.9
Roof	Restrooms	2	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiation Oncology	1	Exhaust Fan	0.5	65.0%	No	W	3,276		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiology	1	Supply Fan	7.5	86.5%	No	W	3,391		No	86.5%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiology	1	Return Fan	3.0	84.0%	No	W	2,745		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0

		Existing Conditions							Proposed Conditions					Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Remaining Useful Life	Annual Operating Hours	ECM #	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof	MRI - RTU1	1	Supply Fan	3.0	84.0%	No	W	2,745	4, 5	Yes	89.5%	Yes	1	0.9	3,046	0	\$511	\$3,812	\$240	7.0
Roof	Cal Lab RTU	1	Supply Fan	25.0	86.0%	No	W	4,067	4, 5	Yes	93.6%	Yes	1	8.0	37,908	0	\$6,361	\$11,471	\$2,000	1.5
Roof	Cal Lab RTU	1	Return Fan	5.0	84.0%	No	W	2,745	4, 5	Yes	89.5%	Yes	1	1.6	5,077	0	\$852	\$4,197	\$400	4.5
Roof	Maternity RTU	1	Supply Fan	15.0	86.0%	No	W	3,391	4, 5	Yes	92.4%	Yes	1	4.7	18,609	0	\$3,123	\$7,086	\$1,200	1.9
Roof	Maternity RTU	1	Return Fan	5.0	84.0%	No	W	2,745	4, 5	Yes	89.5%	Yes	1	1.6	5,077	0	\$852	\$4,197	\$400	4.5
Roof	Endo RTU	1	Supply Fan	7.5	86.0%	No	W	3,391	4, 5	Yes	91.7%	Yes	1	2.3	9,199	0	\$1,544	\$4,761	\$600	2.7
Roof	Endo RTU	1	Return Fan	5.0	54.0%	No	W	2,745	4, 5	Yes	89.5%	Yes	1	2.9	12,187	0	\$2,045	\$4,197	\$400	1.9
Roof	Trane Units	2	Supply Fan	0.5	72.0%	No	W	2,745		No	72.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Lab AHU1	1	Supply Fan	15.0	86.0%	No	W	3,391	4, 5	Yes	92.4%	Yes	1	4.7	18,609	0	\$3,123	\$7,086	\$1,200	1.9
Roof	Lab AHU1	1	Other	0.5	65.0%	No	W	2,745		No	65.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Roof	Store Unit	1	Supply Fan	3.0	82.0%	No	W	2,745	4, 5	Yes	89.5%	Yes	1	1.0	3,233	0	\$543	\$3,812	\$240	6.6
Roof	Store Unit	1	Supply Fan	1.0	82.0%	No	W	2,745	4, 5	Yes	85.5%	Yes	1	0.3	1,005	0	\$169	\$3,283	\$80	19.0
Roof	MAP Building - 1st, 2nd, 3rd Floor - Trane	3	Supply Fan	20.0	88.0%	No	B	3,391	4, 5	Yes	93.0%	Yes	3	18.5	70,939	0	\$11,904	\$26,551	\$4,800	1.8
Roof	MAP Building - 1st, 2nd, 3rd Floor - Trane	3	Return Fan	10.0	86.0%	No	B	3,391	4, 5	Yes	91.7%	Yes	3	9.7	36,794	0	\$6,174	\$16,125	\$2,400	2.2
Ground Floor	Garbage Disposal	1	Process Pump	5.0	84.0%	No	W	2,745		No	84.0%	No		0.0	0	0	\$0	\$0	\$0	0.0
Hospital	VAV Supply Fan	150	Supply Fan	0.5	65.0%	No	B	2,745	4	Yes	78.2%	No		8.1	29,913	0	\$5,020	\$75,770	\$0	15.1

Electric HVAC Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions						Proposed Conditions							Energy Impact & Financial Analysis						
		System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (MBh)	Remaining Useful Life	ECM #	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (MBh)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	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
Oncology Mech Room	Oncology Mechanical Room	2	Electric Resistance Heat		10.00	W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Bio Medical Care Management	1	Packaged Air-Source HP	5.00	20.50	B	10	Yes	1	Packaged Air-Source HP	5.00	20.50	14.00	3.80	0.9	4,504	0	\$756	\$11,345	\$460	14.4
Roof	Bio Medical Care Management	1	Packaged Air-Source HP	5.00	78.00	B	10	Yes	1	Packaged Air-Source HP	5.00	78.00	14.00	3.80	0.9	9,550	0	\$1,603	\$11,345	\$460	6.8
Roof	Patient Tower - Trane Chillers (80 ton)	2	Split-System AC	80.00		B	NR	Yes	2	Split-System AC	80.00		11.50	19.7	56,241	0	\$9,438	\$176,024	\$0	18.7	
Main Server Room	Main Server Room	3	Split-System Air-Source HP	8.00	34.00	W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Electrical Room	Electrical Room	1	Split-System AC	3.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Waiting Room	1	Packaged Air-Source HP	6.00	31.00	B	10	Yes	1	Packaged Air-Source HP	6.00	31.00	11.50	3.60	0.6	4,082	0	\$685	\$10,679	\$438	15.0
Roof	IV Prep Room	1	Packaged AC	3.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	OR	1	Split-System AC	4.00		B	NR	Yes	1	Split-System AC	4.00		14.00	0.8	2,164	0	\$363	\$5,985	\$368	15.5	
Roof	ED	1	Split-System AC	2.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Roof Electrical Room	2	Split-System AC	3.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Radiology	1	Packaged AC	30.00		B	NR	Yes	1	Packaged AC	30.00		11.50	2.9	8,272	0	\$1,388	\$66,479	\$0	47.9	
Roof	MRI - RTU1 HA - 9,11,13	1	Packaged AC	13.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	RTU2 HA - 8,10,13	1	Packaged AC	5.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Student Lunch Room	1	Split-System AC	2.00		B	NR	Yes	1	Split-System AC	2.00		14.00	0.4	1,082	0	\$182	\$2,992	\$184	15.5	
Roof	Hospital	1	Split-System AC	3.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Hospital	1	Split-System AC	2.00		W		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	Hospital	1	Packaged Air-Source HP	4.00	20.50	B	10	Yes	1	Packaged Air-Source HP	4.00	20.50	14.00	3.80	0.8	4,932	0	\$828	\$9,076	\$368	10.5
Roof	CU1	1	Split-System AC	50.00		N		No						0.0	0	0	\$0	\$0	\$0	0.0	
Roof	OR RTU	1	Packaged AC	30.00		N		No						0.0	0	0	\$0	\$0	\$0	0.0	

		Existing Conditions					Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Remaining Useful Life	ECM #	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	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	Main Server Room	1	Split-System AC	10.00		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Noble	1	Split-System AC	3.00		N		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Cat Lab RTU	1	Packaged AC	60.00		B	NR	Yes	1	Packaged AC	40.00		9.50		11.9	33,749	0	\$5,663	\$88,639	\$0	15.7
Roof	Maternity RTU	1	Packaged AC	40.00		B	NR	Yes	1	Packaged AC	25.00		11.50		11.7	33,318	0	\$5,591	\$42,185	\$1,975	7.2
Roof	Endo RTU	1	Packaged AC	25.00		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Morg	1	Packaged Air-Source HP	4.00	20.50	B	10	Yes	1	Packaged Air-Source HP	4.00	20.50	14.00	3.80	0.8	4,932	0	\$828	\$9,076	\$368	10.5
Roof	Lab AHU1	1	Packaged AC	40.00		B	NR	Yes	1	Packaged AC	40.00		11.50		4.9	14,060	0	\$2,359	\$88,639	\$0	37.6
Roof	Elevator Room	1	Split-System AC	5.00		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Pathology Office	1	Split-System AC	3.00		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Office	1	Split-System Air-Source HP	1.50	22.00	W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Store	1	Packaged Air-Source HP	15.00	61.00	B	10	Yes	1	Packaged Air-Source HP	15.00	61.00	11.50	3.60	1.5	8,912	0	\$1,496	\$24,714	\$1,185	15.7
Roof	Store	1	Packaged Air-Source HP	6.50	23.00	B	10	Yes	1	Packaged Air-Source HP	6.50	23.00	11.50	3.60	0.6	3,593	0	\$603	\$11,569	\$475	18.4
Roof	MAP Building	1	Split-System AC	1.50		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	MAP Building - 1st, 2nd, 3rd Floor	3	Packaged Air-Source HP	60.00	307.00	B	10	Yes	3	Packaged Air-Source HP	60.00	307.00	9.50	3.20	-2.3	33,886	0	\$5,686	\$282,848	\$0	49.7
IT Storage Room	IT Storage Room	1	Window AC	0.67		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Doctors In Call Rooms	Doctors On Call Rooms	2	Split-System Air-Source HP	2.00	11.94	W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiation Oncology	1	Split-System AC	2.50		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiation Oncology	1	Split-System AC	3.00		W		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiation Oncology	1	Split-System AC	2.50		W		No							0.0	0	0	\$0	\$0	\$0	0.0

Electric Chiller Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
		Chiller Quantity	System Type	Cooling Capacity per Unit (Tons)	Remaining Useful Life	ECM #	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
OR Mechanical Room	OR	1	Air-Cooled Reciprocating Chiller	80.00	B	11	Yes	1	Air-Cooled Screw Chiller	Variable	80.00	1.24	0.74	45.5	96,671	0	\$16,222	\$78,778	\$7,200	4.4
Roof	Mancini Tower	2	Air-Cooled Screw Chiller	185.00	N		No							0.0	0	0	\$0	\$0	\$0	0.0
Patient Tower	Patient Tower	2	Air-Cooled Reciprocating Chiller	80.00	B	11	Yes	2	Air-Cooled Screw Chiller	Variable	80.00	1.24	0.74	91.0	193,341	0	\$32,445	\$157,556	\$14,400	4.4
Roof	ED AHU1	1	Air-Cooled Scroll Chiller	88.00	N		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	ED AHU2	1	Air-Cooled Scroll Chiller	108.00	N		No							0.0	0	0	\$0	\$0	\$0	0.0
Roof	Radiology/Oncology	1	Air-Cooled Scroll Chiller	7.50	W		No							0.0	0	0	\$0	\$0	\$0	0.0
Ground	MRI	1	Air-Cooled Screw Chiller	2.84	W		No							0.0	0	0	\$0	\$0	\$0	0.0

Fuel Heating Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions				Proposed Conditions							Energy Impact & Financial Analysis						
		System Quantity	System Type	Output Capacity per Unit (MBh)	Remaining Useful Life	ECM #	Install High Efficiency System?	System Quantity	System Type	Output Capacity per Unit (MBh)	Heating Efficiency	Heating Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boiler Room	Hospital Facility Heating System	2	Forced Draft Steam Boiler	8,368.00	B	NR	Yes	2	Forced Draft Steam Boiler	8,368.00	83.00%	Et	0.0	0	2,188	\$19,741	\$286,777	\$0	14.5
Roof	Mancini Pavilion - MAU1 - MAU2	2	Furnace	200.00	B	12	Yes	2	Furnace	200.00	95.00%	AFUE	0.0	0	92	\$826	\$9,063	\$800	10.0
Roof	Lab AHU1	1	Furnace	400.00	B		No						0.0	0	0	\$0	\$0	\$0	0.0

Demand Control Ventilation Recommendations

Location	Area(s)/System(s) Affected	Recommendation Inputs					Energy Impact & Financial Analysis						
		ECM #	Number of Zones	Cooling Capacity of Controlled System (Tons)	Electric Heating Capacity of Controlled System (kBtu/hr)	Output Heating Capacity of Controlled System (MBh)	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
AHU3	Dining Area	13	5.00	80.00	0.00	975.00	0.0	9,074	210	\$3,421	\$6,797	\$0	2.0

Pipe Insulation Recommendations

Location	Area(s)/System(s) Affected	Recommendation Inputs			Energy Impact & Financial Analysis						
		ECM #	Length of Uninsulated Pipe (ft)	Pipe Diameter (in)	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
Patient Tower Mech Room	High Pressure Steam Pipes	14	15	4.00	0.0	0	23	\$204	\$132	\$0	0.6
Patient Tower Mech Room	Steam Pipes - Sterilization	14	10	1.50	0.0	0	7	\$60	\$88	\$0	1.5

DHW Inventory & Recommendations

Location	Area(s)/System(s) Served	Existing Conditions			Proposed Conditions							Energy Impact & Financial Analysis						
		System Quantity	System Type	Remaining Useful Life	ECM #	Replace?	System Quantity	System Type	Fuel Type	System Efficiency	Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Mancini Mech Room	Patient Tower	1	Storage Tank Water Heater (≤ 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
Radio/Oncology Mech Room	Radiology/Oncology	1	Storage Tank Water Heater (≤ 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
4th Mechanical Room	Mancini Tower	2	Storage Tank Water Heater (> 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
Mechanical Room	MAP Building - 1st Floor	1	Storage Tank Water Heater (> 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
Closet	MAP Building - 3rd Floor	1	Storage Tank Water Heater (> 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
Closet	MAP Building - 2nd Floor	1	Storage Tank Water Heater (> 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
Closet	MAP Building - 1st Floor	1	Storage Tank Water Heater (> 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0
Closet	Oncology	1	Storage Tank Water Heater (> 50 Gal)	W		No						0.0	0	0	\$0	\$0	\$0	0.0

Walk-In Cooler/Freezer Inventory & Recommendations

Location	Existing Conditions		Proposed Conditions				Energy Impact & Financial Analysis						
	Cooler/Freezer Quantity	Case Type/Temperature	ECM #	Install EC Evaporator Fan Motors?	Install Electric Defrost Control?	Install Evaporator Fan Control?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Hospital	1	Cooler (35F to 55F)	15, 16	Yes	Yes	Yes	0.7	8,785	0	\$1,474	\$2,799	\$125	1.8
Cafeteria	1	Cooler (35F to 55F)	15, 16	Yes	Yes	Yes	0.8	10,439	0	\$1,752	\$3,406	\$285	1.8
Cafeteria	1	Medium Temp Freezer (0F to 30F)	15, 16	Yes	Yes	Yes	0.8	9,449	0	\$1,586	\$2,799	\$125	1.7

Commercial Refrigerator/Freezer Inventory & Recommendations

Location	Existing Conditions			Proposed Conditions		Energy Impact & Financial Analysis						
	Quantity	Refrigerator/ Freezer Type	ENERGY STAR Qualified?	ECM #	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Cafeteria	2	Stand-Up Refrigerator, Solid Door (>50 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	3	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	2	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Stand-Up Refrigerator, Solid Door (31 - 50 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Stand-Up Freezer, Solid Door (16 - 30 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	2	Stand-Up Refrigerator, Glass Door (31 - 50 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Stand-Up Freezer, Solid Door (16 - 30 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Stand-Up Refrigerator, Solid Door (16 - 30 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Stand-Up Refrigerator, Glass Door (16 - 30 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Hospital	1	Stand-Up Refrigerator, Glass Door (>50 cu. ft.)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0

Commercial Ice Maker Inventory & Recommendations

Location	Existing Conditions			Proposed Conditions		Energy Impact & Financial Analysis						
	Quantity	Ice Maker Type	ENERGY STAR Qualified?	ECM #	Install ENERGY STAR Equipment?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Cafeteria	1	Ice Making Head (≥450 lbs/day), Batch	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0

Cooking Equipment Inventory & Recommendations

Location	Existing Conditions			Proposed Conditions		Energy Impact & Financial Analysis						
	Quantity	Equipment Type	High Efficiency Equipment?	ECM #	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
Cafeteria	1	Gas Convection Oven (Half Size)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Gas Griddle (4 Feet Width)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Insulated Food Holding Cabinet (Full Size)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Gas Convection Oven (Half Size)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	2	Gas Combination Oven/Steam Cooker (<15 Pans)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Gas Fryer	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	2	Electric Steamer	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Electric Convection Oven (Full Size)	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Gas Steamer	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Electric Steamer	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0
Cafeteria	1	Electric Fryer	Yes		No	0.0	0	0	\$0	\$0	\$0	0.0

Dishwasher Inventory & Recommendations

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

Plug Load Inventory

Location	Existing Conditions			
	Quantity	Equipment Description	Energy Rate (W)	ENERGY STAR Qualified?
Hispital	582	Desktop Computer	120.0	Yes
Hispital	163	Printer	55.0	Yes
Hispital	58	Copy Machine	650.0	Yes
Hispital	22	Ice Machine	1,320.0	No
Hispital	55	Small Refrigerator	124.0	Yes
Hispital	235	Wall TV	120.0	No
Hispital	49	Refrigerator	224.0	No
Hispital	48	Microwave	1,000.0	No
Hispital	44	Coffee Machine	800.0	No
Hispital	8	Commercial Coffee Machine	1,760.0	No
Hispital	11	Toaster	800.0	No
Hispital	2	Electric Range	1,200.0	No
Hispital	2	Combo Washing/Drying Machine	1,500.0	No
Hispital	25	Water Cooler	172.0	Yes
Hispital	32	Blanket Warmer	1,380.0	No
Hispital	2	Unicel Clinical Analyser	3,300.0	No
Cafeteria	1	Electric Booster Pump	36,000.0	No
Cafeteria	1	Electric Mixer	1,100.0	No
Cafeteria	1	Electric Kettle	1,250.0	No
Cafeteria	3	Food Warmer	7,000.0	No
Cafeteria	3	Convection Heated Plate	4,800.0	No
Hispital	3	Lab Freezers	225.0	Yes
Cafeteria	1	Food Waste Disposer	2,000.0	No
Hispital	1	Glovebox	690.0	No
Main Data Center	11	Server	750.0	Yes
Main Data Center	6	Server	460.0	Yes
Main Data Center	3	Server	1,080.0	Yes
Main Data Center	4	Server	400.0	Yes
Main Data Center	8	Server	100.0	Yes
Main Data Center	34	Server	700.0	Yes
Hispital	150	Various Medical Equipment	250.0	No

Vending Machine Inventory & Recommendations

Location	Existing Conditions		Proposed Conditions		Energy Impact & Financial Analysis						
	Quantity	Vending Machine Type	ECM #	Install Controls?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Hospital	4	Refrigerated	17	Yes	0.7	6,447	0	\$1,082	\$920	\$200	0.7
Hospital	3	Non-Refrigerated	N/A	No	0.0	0	0	\$0	\$0	\$0	0.0

APPENDIX B: ENERGY STAR® STATEMENT OF ENERGY PERFORMANCE

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.

ENERGY STAR® Statement of Energy Performance

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77

ENERGY STAR®
Score¹

HMH Southern Ocean Medical Center

Primary Property Type: Hospital (General Medical & Surgical)
Gross Floor Area (ft²): 328,478
Built: 1972

For Year Ending: April 30, 2018
Date Generated: February 12, 2019

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	
HMH Southern Ocean Medical Center 1140 W Route 72 Manahawkin, New Jersey 08050	_____	_____	
	() -	() -	
Property ID: 6650511			
Energy Consumption and Energy Use Intensity (EUI)			
Site EUI	Annual Energy by Fuel	National Median Comparison	
130.5 kBtu/ft ²	Electric - Grid (kBtu) 42,865,681 (100%)	National Median Site EUI (kBtu/ft ²)	150.9
		National Median Source EUI (kBtu/ft ²)	422.4
		% Diff from National Median Source EUI	-14%
Source EUI		Annual Emissions	
365.4 kBtu/ft ²		Greenhouse Gas Emissions (Metric Tons CO ₂ e/year)	4,343

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)

APPENDIX C: GLOSSARY

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

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

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