

BERGEN COUNTY JUSTICE CENTER

**10 MAIN ST.
HACKENSACK, NJ, 07601**

FACILITY ENERGY REPORT

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I. HISTORIC ENERGY CONSUMPTION/COST

The energy usage for the facility has been tabulated and plotted in graph form as depicted within this section. Each energy source has been identified and monthly consumption and cost noted per the information provided by the Owner.

Electric Utility Provider:	Public Service Electric & Gas
Electric Utility Rate Structure:	Not available
Third Party Supplier:	None

Natural Gas Utility Provider:	Public Service Electric & Gas
Utility Rate Structure:	Not available
Third Party Supplier:	Great Eastern Energy

The electric usage profile represents the actual electrical usage for the facility. The electric utility measures consumption in kilowatt-hours (KWH) and maximum demand in kilowatts (KW). One KWH usage is equivalent to 1000 watts running for one hour. One KW of electric demand is equivalent to 1000 watts running at any given time. The basic usage charges are shown as generation service and delivery charges along with several non-utility generation charges. Rates used in this report reflect the historical data received for the facility.

The gas usage profile within each facility report shows the actual natural gas energy usage for the facility. The gas utility measures consumption in cubic feet x 100 (CCF), and converts the quantity into Therms of energy. One Therm is equivalent to 100,000 BTUs of energy.

Table 1
Electricity Billing Data

ELECTRIC USAGE SUMMARY			
Utility Provider: PSE&G Rate: N/A Meter No: 778011748, 626001967, - Account # 6581943401, 6500168909, 4200571609 Third Party Utility Provider: None TPS Meter / Acct No: -			
MONTH OF USE	CONSUMPTION KWH	DEMAND	TOTAL BILL
Mar-10	482,457	1153.3	\$27,553
Apr-10	594,963	1170.5	\$30,659
May-10	552,242	1261.9	\$31,753
Jun-10	509,683	1344.9	\$31,958
Jul-10	433,437	1252.1	\$20,309
Aug-10	447,742	955.8	\$18,994
Sep-10	408,911	867.7	\$18,959
Nov-10	387,924	865.4	\$14,762
Dec-10	407,086	876.1	\$14,900
Jan-11	439,447	997.4	\$16,869
Feb-11	422,977	876.9	\$16,639
Mar-11	399,743	833.7	\$14,994
Totals	5,486,612	1344.9 Max	\$258,351
<p align="center">AVERAGE DEMAND 1038.0 KW average</p> <p align="center">AVERAGE RATE \$0.047 \$/kWh</p>			

Figure 1
Electricity Usage Profile

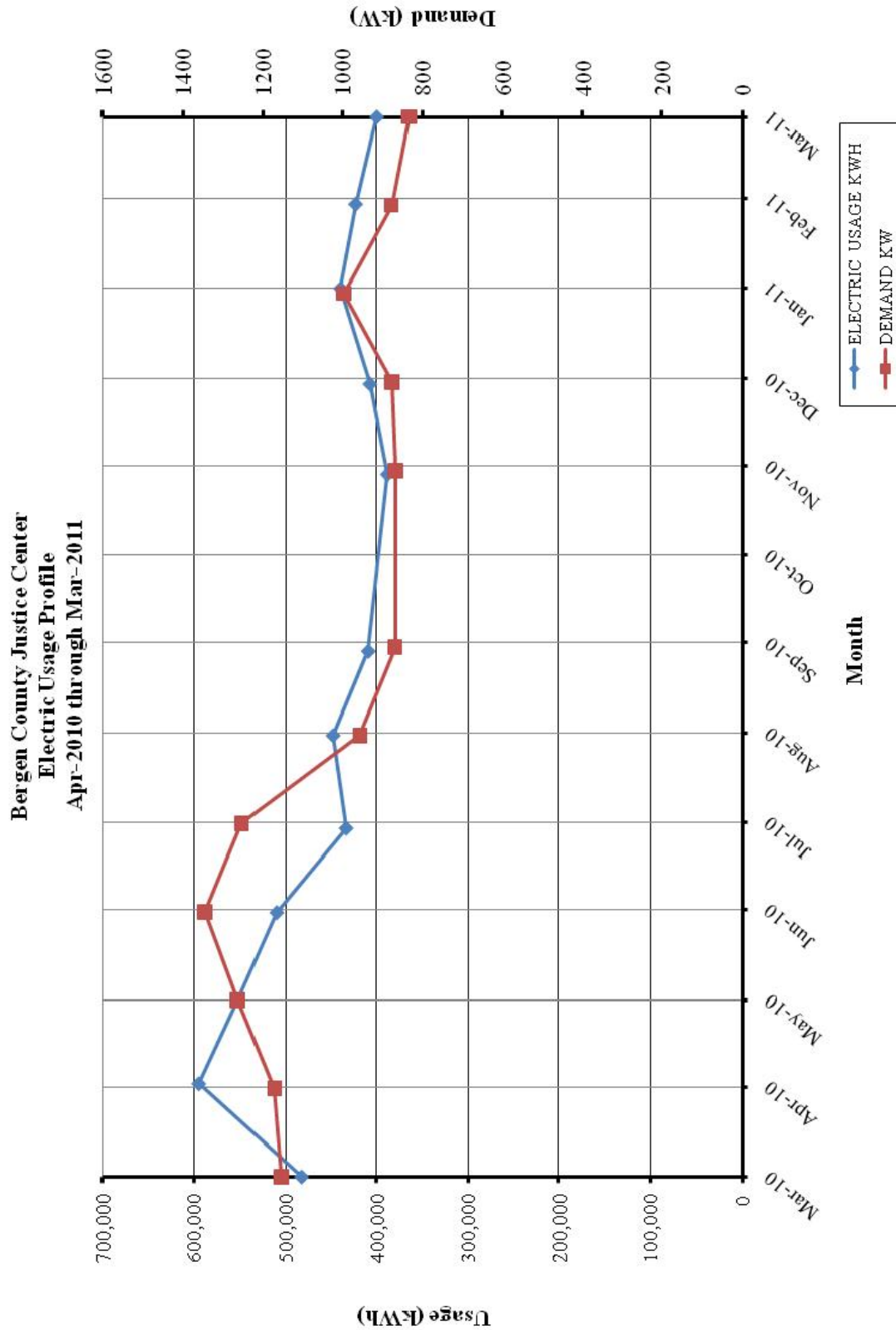


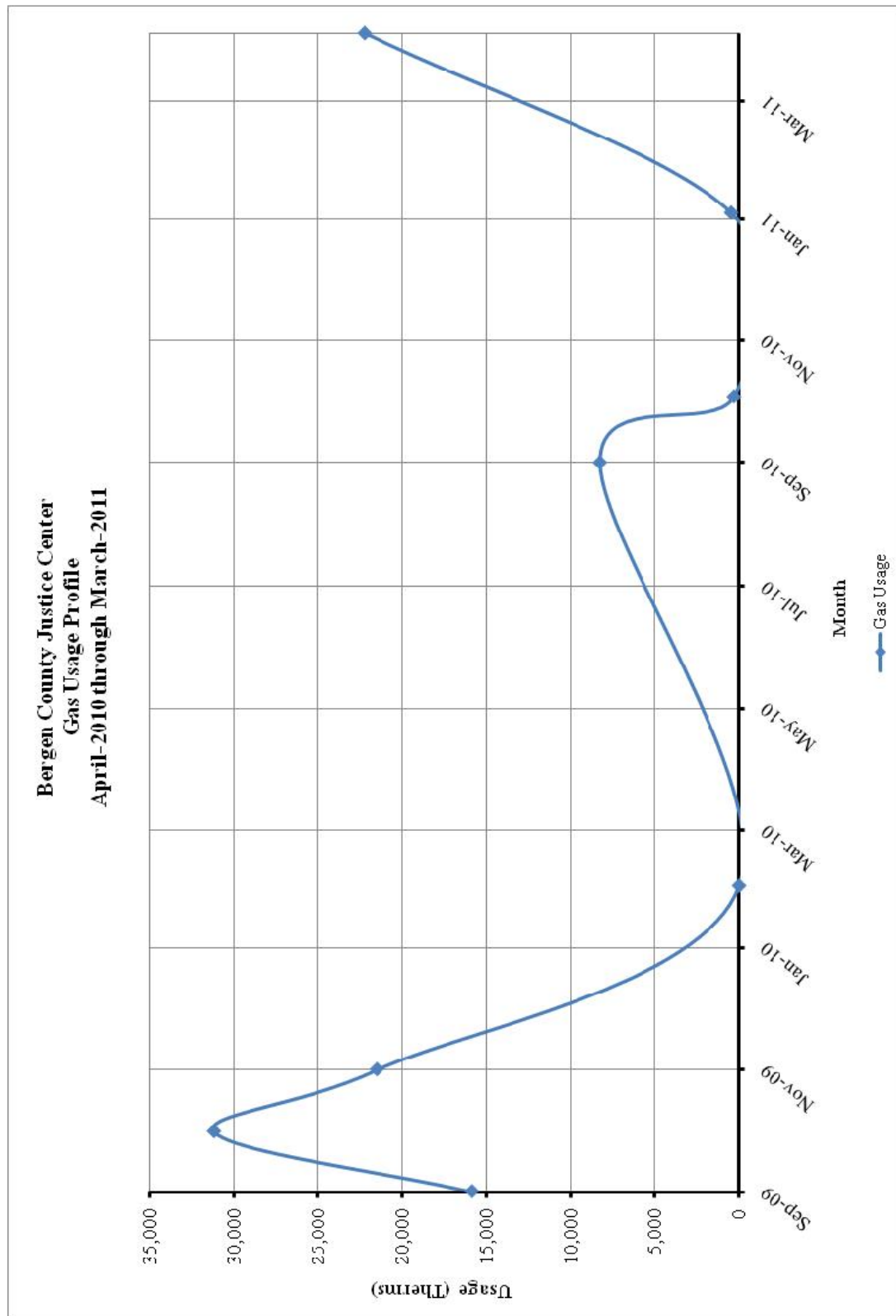
Table 2
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider: PSE&G Rate: N/A Meter No: 3228923 Account #: 42 005 716 09 Third Party Utility Provider: Great Eastern Energy TPS Meter No: N/A		
MONTH OF USE	CONSUMPTION (THERMS)	TOTAL BILL*
Dec-09	15,853	1,788
May-10	31,158	10,303
Jul-10	21,492	7,919
Sep-10	8,258	5,263
Oct-10	305	143
Nov-10	0	97
Jan-11	466	148
Mar-11	22,214	6,997
TOTALS**	99,747.26	\$32,657.26
AVERAGE RATE:	\$0.33	\$/THERM

* Total cost does not include third party supplier cost, which was not available for this utility.

** Billing data for 12 consecutive months was not available for this utility. (Data missing for April'10, June'10, Dec'10, Feb'11)

Figure 2
Natural Gas Usage Profile



II. FACILITY DESCRIPTION

The 424,000 SF Bergen County Justice Center is large justice facility with multiple interconnected structures comprised of courtrooms, administration offices, cafeteria, restrooms, boiler rooms, custodial spaces and storage spaces.

The hours of operation for the facility are between 7:00 AM and 4:30 PM on the weekdays. Some of the office staff and the custodial services remain in the building until 11:00 PM. The facility is closed on weekends. Estimated average daily occupancy of the building is 2,000 including administrative staff, judges, juries and visitors.

The Justice Center is combination of multiple vintages of structures built within the last 100 years. The Old Courthouse and the Old Jail were built in 1910. In 1932, the Old Administration Building was built. All three buildings were apart until these three structures were connected via a new structure in 1957, which is referred as the new wing. An attached single story building was built to house the central boiler plant for the facility. Currently, Old Jail building is partially occupied and it houses the Sherriff's Department. Old Administration building houses new courtrooms and the new wing houses majority of the administrative offices.

Old courthouse is a four (4) story building constructed of large masonry block walls. The envelope of this building has approximately 20 years old wooden casement windows with aluminum veneer and double pane glasses. The roof of this building is made up of standing seam copper panels with slight pitch at the dome. The Old Jail building is a five (5) story building constructed of cinderblock walls and brick façade. The amount of insulation in the walls is not known. The Old Jail building has new casement type double pane windows and it has a built up roof with slate covering. Old Administration building is also a four (4) story building constructed of large masonry block walls. The windows in this building are old and in fair condition. Typical windows are single pane windows with double hung metal frames. Old Administration building has a built up roof with asphalt ply covering. Finally, the New Wing building is a five (5) story building constructed of large concrete masonry block walls partially covered with Aluminum panels. New Wing also has double hung metal windows with single pane clear glass. The New Wing building is has a built-up rubber roof with tar and gravel cover. Estimated insulation under the roof material is not known. Blinds are utilized through the facility per occupant comfort. The blinds are valuable because they help to reduce heat loss in the winter and reduce solar heat in the summer.

Majority of the HVAC equipment is located on the roof of each building except for the Old Courthouse building. There are three penthouse fan rooms over the New Wing, which houses air handling units for the upper floors.

HVAC Systems

Boilers

The heating for the facility is provided from a central boiler plant, which houses three (3) HB-Smith gas fired low pressure steam boilers. The nameplates and the number of sections of the boilers #1, 2 and 3 indicate that the rated input capacities are 17,100 MBH, 8,715 MBH and

11,543 MBH respectively. The boilers' rated output capacities are 350 HP, 250 HP and 175 HP respectively. The boilers #1 and 2 are approximately 21 years old while the boiler #3 is four (4) years old. The boilers are fitted with Industrial Combustion dual fuel, forced draft burners. Burners for the boilers #1 and 2 are Industrial Combustion D-series packaged burners with full modulation and high turndown ratios. The burner #3 is an Industrial Combustion LN-series packaged burners with constant firing rate.

The boilers are controlled with HeatTimer boiler sequencers with outside air sensors and space sensors. It was reported that the space sensors often cause temperature control problems and currently eliminated. Currently, the boilers are fired based on outside air temperature. Each boiler is controlled with a separate HeatTimer controller, which modulates 2-way steam control valves for each heating zone.

The steam distribution in the Old Jail is via a single-pipe delivery system while the rest of the facility steam delivery is via 2-pipe system. Steam is delivered to the cast iron steam radiators in the spaces and the preheat coils in the air handling units. Condensate pumps for the steam boilers appear to be in good conditioned and maintained well.

Chillers

Bergen County Justice Center houses three (3) electric driven chillers made by Multistack and Technical Systems Inc.

The Multistack modular chiller unit is a 120 Ton MS30 model chiller installed in 2005. It is a water-cooled, multiple stage modular chiller using R22 refrigerant. Load control of this chiller is achieved via multiple compressor staging. MultistackMS30 is located in the main fan room in over the new wing. It serves air handling units in the in the main fan room and the rooftop units. Chilled water is circulated through the chilled water coils in the air handling unit via a set of three (3) pumps. Each pump is driven with a 7.5 HP standard efficiency electric motors. Two pumps run at a time.

Condenser water is circulated through this chiller via three (3) base mounted water pumps. The pumps are driven with 10 HP standard efficiency motors. Two (2) forced draft cooling towers provide condenser water cooling for the Multistack water cooled chiller. The towers are made by Marley. Each tower has a standard efficiency, single speed 7.5 HP fan. Towers appear in good condition.

2nd and 3rd chillers are a set of two (2) 160 ton Technical Systems 30AO air cooled chillers installed in year 2001. Each chiller has four (4) 30 kW Hitachi screw compressors using R22 refrigerant. Chiller load control is achieved via compressor staging. 30AO units are located on the roof of the new wing. The chillers feed air handling units in the in the penthouse MER's and rooftop units. Each chiller is equipped with two (2) chilled water pumps mounted directly on the unit framing. The pumps are driven with 20 HP standard efficiency motors.

Cooling for the Majority of the perimeter of offices in the entire facility is provided with 1 to 2 ton window air conditioning units. There are approximately 208 window air conditioners in this facility.

Air Distribution

Air conditioning in the Old Courthouse is supplied mostly with window air conditioners. Third (3rd) and fourth (4th) floors are partially conditioned with several smaller air handling units. The units have steam and chilled water coils for supply air heating and cooling. Air conditioning in the old jail building is also provided mostly with window air conditioners. In addition, there are several small DX split air conditioning units for individual offices. Jury room is conditioned with an air handling unit with chilled water coils.

Majority of the old administration building air conditioning is provided with a large number of window air conditioning units. It was reported that there are numerous complaints about the window air conditioning unit noise in the courtrooms.

3rd and 4th floors of the old administration building heated and air conditioned with two (2) Mammoth rooftop air handling units. The units are equipped with DX coils for cooling and steam coils for heating. Each unit has approximately 60 ton cooling capacity. Units are over 20 years old. In addition to the Mammoth units, there are two (2) Carrier packaged A/C units feeding the Old BCI administration unit. Each unit has 10 ton cooling capacity. The Carrier units are approximately 15 years old. Cafeteria area is conditioned with two (2) new split air conditioning units made by Rheem. The units have 5 ton cooling capacity each.

New wing air conditioning is mostly provided with custom built air handling units located in three (3) separate penthouse mechanical rooms located on the top of the new wing. The air handling units are equipped with constant volume fans, steam and chilled water coils. There are several packaged and split air conditioning units and window air conditioning units feeding several sections of the new wing. Summary of each unit is detailed in the **Major Equipment List Appendix**.

In addition to the comfort cooling units, there are several ductless split units for computer room cooling. The computer room and the mail room are conditioned by a cooling only ductless split system made by EMI and Mitsubishi. The computer room unit runs 24/7 to cool the municipal building servers. The units are in good condition. A separate 12.5 Ton Carrier split unit provides cooling for the mail room. The unit is approximately two (2) years old. In addition, a split air conditioning unit provides cooling for the penthouse storage room over the Old Administration building. The unit was installed over 20 years ago and needs replacing with a more efficient unit.

HVAC System Controls

The majority of the air handling units and the rooftop units within the facility are controlled mainly via mechanical time clocks. Window A/C units are controlled manually through on board control switches.

The Trane air cooled chillers, the Multistack water cooled chiller and the AHU-215 is controlled via the JCI Metasys central control system located in the Bergen County Administration Plaza.

Domestic Hot Water

Domestic hot water for the old administration building and the new wing are provided with a gas fired split domestic hot water heating and circulating system made by AO Smith. The system includes a 420 MBh domestic hot water boiler and an approximately 200 gallon hot water retaining tank. The domestic hot water is circulated throughout the administration building and the new wing via a pipe mounted hot water circulator. The circulation pump is controlled by an aqua stat. The domestic hot water heating system, piping and the insulation appeared to be in good condition.

Domestic hot water for the restrooms and offices in the Old Courthouse is provided by several small electric hot water heaters located under sink cabinets at the point of use.

Exhaust System

Air is exhausted from the toilet rooms through the roof exhausters. The toilet room exhaust fan is operated based on the facility occupancy schedule and controlled with mechanical time-clocks. Some of the large return fans in the main fan room also serve as the exhaust fans for the corresponding spaces.

Lighting

Refer to the Investment Grade lighting Audit Appendix for a detailed list of the lighting throughout the facility and estimated operating hours per space.

III. MAJOR EQUIPMENT LIST

The equipment list contains major energy consuming equipment that through implementation of energy conservation measures could yield substantial energy savings. The list shows the major equipment in the facility and all pertinent information utilized in energy savings calculations. An approximate age was assigned to the equipment in some cases if a manufactures date was not shown on the equipment's nameplate. The ASHRAE service life for the equipment along with the remaining useful life is also shown in the Appendix.

Refer to the **Major Equipment List Appendix** for this facility.

IV. ENERGY CONSERVATION MEASURES

Energy Conservation Measures are developed specifically for this facility. The energy savings and calculations are highly dependent on the information received from the site survey and interviews with operations personnel. The assumptions and calculations should be reviewed by the owner to ensure accurate representation of this facility. The following ECMs were analyzed:

Table 3
ECM Financial Summary

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	DESCRIPTION	NET INSTALLATION COST^A	ANNUAL SAVINGS^B	SIMPLE PAYBACK (Yrs)	SIMPLE LIFETIME ROI
ECM #1	Lighting Upgrade	\$59,440	\$25,379	2.3	540.5%
ECM #2	Lighting Controls	\$48,675	\$9,099	5.3	180.4%
ECM #3	Energy Star Rated Window AC Units	\$625	\$57	10.9	-8.0%
ECM #4	Valve Blanket & Pipe Insulation	\$5,500	\$1,985	2.8	441.3%
ECM #5	Install Variable Frequency Drives	\$120,375	\$5,769	20.9	-28.1%
ECM #6	AC Unit Replacements	\$202,648	\$4,094	49.5	-69.7%
ECM #7	NEMA Premium Efficiency Motors	\$64,464	\$3,486	18.5	-18.9%
ECM #8	Install VRF AC System	\$601,536	\$36,870	16.3	-8.1%
ECM #9	Install Water Cooled Chillers	\$884,100	\$30,708	28.8	-47.9%
ECM #10	Thermostatic Steam Control Valves	\$175,000	\$19,750	8.9	69.3%
ECM #11	Boiler Controls Upgrade - Space Temperature Sensors	\$15,000	\$8,641	1.7	764.1%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	DESCRIPTION	NET INSTALLATION COST	ANNUAL SAVINGS	SIMPLE PAYBACK (Yrs)	SIMPLE LIFETIME ROI
REM #1	Solar Photovoltaic System	\$6,557,760	\$445,074	14.7	1.8%

Notes: A. Cost takes into consideration applicable NJ Smart StartTM incentives.
B. Savings takes into consideration applicable maintenance savings.

Table 4
ECM Energy Summary

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	DESCRIPTION	ANNUAL UTILITY REDUCTION		
		ELECTRIC DEMAND (KW)	ELECTRIC CONSUMPTION (KWH)	NATURAL GAS (THERMS)
ECM #1	Lighting Upgrade	47.8	191,413	0
ECM #2	Lighting Controls	0.0	68,928	0
ECM #3	Energy Star Rated Window AC Units	0.4	348	0
ECM #4	Valve Blanket & Pipe Insulation	0	0	1,985
ECM #5	Install Variable Frequency Drives	0	38,460	0
ECM #6	AC Unit Replacements	27.9	29,877	0
ECM #7	NEMA Premium Efficiency Motors	8.9	21,129	0
ECM #8	Install VRF AC System	182.0	201,557	3,285
ECM #9	Install Water Cooled Chillers	244.0	195,200	0
ECM #10	Thermostatic Steam Control Valves	0.0	0	19,750
ECM #11	Boiler Controls Upgrade - Space Temperature Sensors	0.0	0	8,641
RENEWABLE ENERGY MEASURES (REM's)				
ECM NO.	DESCRIPTION	ANNUAL UTILITY REDUCTION		
		ELECTRIC DEMAND (KW)	ELECTRIC CONSUMPTION (KWH)	NATURAL GAS (THERMS)
REM #1	Solar Photovoltaic System	728.6	890,147	0

Table 5
Facility Project Summary

ENERGY SAVINGS IMPROVEMENT PROGRAM - POTENTIAL PROJECT					
ENERGY CONSERVATION MEASURES	ANNUAL ENERGY SAVINGS (\$)	PROJECT COST (\$)	SMART START INCENTIVES	CUSTOMER COST **	SIMPLE PAYBACK
Lighting Upgrade	\$25,379	\$61,860	\$2,420	\$59,440	2.3
Lighting Controls	\$9,099	\$54,775	\$6,100	\$48,675	5.3
Energy Star Rated Window AC Units	\$57	\$625	\$0	\$625	10.9
Valve Blanket & Pipe Insulation	\$1,985	\$5,500	\$0	\$5,500	2.8
NEMA Premium Efficiency Motors	\$3,486	\$66,804	\$2,340	\$64,464	18.5
Install VRF AC System	\$36,870	\$624,000	\$22,464	\$601,536	16.3
Install Water Cooled Chillers	\$30,708	\$900,000	\$15,900	\$884,100	28.8
Thermostatic Steam Control Valves	\$19,750	\$175,000	\$0	\$175,000	8.9
Boiler Controls Upgrade - Space Temperature	\$8,641	\$15,000	\$0	\$15,000	1.7
<i>Design / Construction Extras (15%)</i>		\$285,535		\$285,535	
Total Project	\$135,975	\$2,189,099	\$49,224	\$2,139,875	15.7

Design / Construction Extras is shown as an additional cost for the facility project summary. This cost is included to estimate the costs associated with construction management fees for a larger combined project.

ECM #1: Lighting Equipment Upgrade

Description:

Re-lamping

The majority of the interior lighting throughout the Bergen County Justice Center is provided with fluorescent fixtures with older generation, 700 series 32W T8 lamps and electronic ballasts. Although 700 series T8 lamps are considered fairly efficient, further energy savings can be achieved by replacing the existing T8 lamps with new generation, 800 series 28W T8 lamps without compromising light output. CEG recommends, re-lamping all of the fixtures with 28W T8 lamps. In addition, some of the storage areas, locker room and gym areas, offices, auditorium, classrooms, restrooms and kitchen areas still have a variety of older fluorescent fixtures with magnetic ballasts and incandescent lamps. It is recommended to retrofit or replace all of the older fluorescent fixtures and the incandescent lights in these areas with high efficiency fluorescent T8 or T5 fixtures with electronic ballasts or compact fluorescent lamps. This ECM includes re-lamping of the existing fluorescent 32W T8 lamps with 800 series, 28W T8 lamps.

Re-lamping & new ballasts

The ECM also includes retrofit of all older fluorescent fixtures containing T12 lamps and magnetic ballasts with T8 or T5 fluorescent lamps and electronic ballasts. The new, energy efficient fixtures with T8 lamps will provide adequate lighting and will save on electrical costs due to better performance of the lamp and ballasts. This ECM also includes maintenance savings through the reduced number of lamps replaced per year. The expected lamp life of a T8 lamp is approximately 30,000 burn-hours, in comparison to the existing T12 lamps which is approximately 20,000 burn-hours. The facility will need approximately 33% less lamps replaced per year for each one for one fixture replaced.

Compact Fluorescent Lamps

The ECM also includes replacement of any incandescent lamps with compact fluorescent lamps. Compact fluorescent lamps (CFL's) were designed to be direct replacements for the standard incandescent lamps which are common to table lamps, spot lights, hi-hats, bathroom vanity lighting, etc. The light output of the CFL has been designed to resemble the incandescent lamp. The energy usage of an incandescent compared to a compact fluorescent approximately 3 to 4 times greater. In addition to the energy savings, compact fluorescent fixtures burn-hours are 8 to 15 times longer than incandescent fixtures ranging from 6,000 to 15,000 burn-hours compared to incandescent fixtures ranging from 750 to 1000 burn-hours. However, the maintenance savings due to reduced lamp replacement is offset by the higher cost of the CFL's compared to the incandescent lamps.

LED Exit Signs

There are exit signs with incandescent lamps throughout the Justice Center building. It is recommended to replace all of the incandescent exit signs with high efficiency LED signs. LED

is an acronym for light-emitting-diode. LED's are small light sources that are readily associated with electronic equipment. LED exit signs have been manufactured in a variety of shapes and sizes. The benefits of LED technology are substantial. LED exit signs will last for 20-30 years without maintenance. This results in tremendous maintenance savings considering that the fluorescent lamps in the existing fixtures need to be replaced at a rate of once in 3-4 years. Lamp costs (\$2-\$7 each) and labor costs (\$8-\$20 per lamp) add up rapidly. Additionally, a LED exit sign total fixture input can be as low as 2 Watts. This ECM will replace all of the existing exit signs with new LED exit fixtures. The basis of design is the Progress Lighting PE001 LED Exit Sign or equal. The included battery provides 1-1/2 hours of emergency power.

Metal Halides

The boiler room lighting is provided with 400W Probe Start Metal-Halide fixtures. This type of metal halide fixtures are older technology units with extended strike times and lower lighting output per wattage. CEG recommends replacing all of the existing metal halide fixtures with 6-lamp high-bay fluorescent fixtures with T5HO lamps and electronic ballasts. This ECM replaces all of the Metal-Halide fixtures in the Warehouse with T5HO fixtures. New energy efficient fixtures will provide adequate lighting and save the owner on electrical costs due to the better performance of the lamp and ballasts.

Energy Savings Calculations:

The **Investment Grade Lighting Audit Appendix** outlines the hours of operation, proposed retrofits, costs, savings, and payback periods for each set of fixtures in the each building.

Rebates and Incentives:

NJ Smart Start® Program Incentives are calculated using the **Smart Start® Incentive Appendix** as follows:

Retrofit of T-12 fixtures to T-5 or T-8 with electric ballasts	\$10 per fixture (1-4 lamp retrofits)
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SmartStart® Incentive= (# of fixtures× \$10)= 103× \$10= \$1030

LED Exit Signs (new fixtures only): For existing facilities with connected load ≥ 75 kW	\$10 per fixture
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SmartStart® Incentive= (# of fixtures× \$10)= 29× \$10= \$290

HID Fixtures, 400-999 Watt to T-5 or T-8	\$100 per fixture
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SmartStart® Incentive= (# of fixtures× \$10)= 11× \$10= \$1,100

Replacement and Maintenance Savings are calculated as follows:

$$\text{Savings} = (\text{reduction in lamps replaced per year}) \times (\text{replacement cost per lamp} + \text{Labor cost per lamp})$$

$$\text{Savings} = 1609 \times (\$2 \text{ per lamp} + \$5 \text{ per lamp}) = \$113$$

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$61,860
NJ Smart Start Equipment Incentive (\$):	\$2,420
Net Installation Cost (\$):	\$59,440
Maintenance Savings (\$/Yr):	\$113
Energy Savings (\$/Yr):	\$25,267
Total Yearly Savings (\$/Yr):	\$25,379
Estimated ECM Lifetime (Yr):	15
Simple Payback	2.3
Simple Lifetime ROI	540.5%
Simple Lifetime Maintenance Savings	\$1,689
Simple Lifetime Savings	\$380,687
Internal Rate of Return (IRR)	42%
Net Present Value (NPV)	\$243,534.35

ECM #2: Lighting Controls Upgrade – Occupancy Sensors

Description:

Some of the lights in this facility are left on unnecessarily. In many cases the lights are left on because of the inconvenience to manually switch lights off when a room is left or on when a room is first occupied. This is common in rooms that are occupied for only short periods and only a few times per day. In some instances lights are left on due to the misconception that it is better to keep the lights on rather than to continuously switch lights on and off. Although increased switching reduces lamp life, the energy savings outweigh the lamp replacement costs. The payback timeframe for when to turn the lights off is approximately two minutes. If the lights are expected to be off for at least a two minute interval, then it pays to shut them off.

Lighting controls come in many forms. Sometimes an additional switch is adequate to provide reduced lighting levels when full light output is not needed. Occupancy sensors detect motion and will switch the lights on when the room is occupied. Occupancy sensors can either be mounted in place of a current wall switch, or on the ceiling to cover large areas.

The U.S. Department of Energy sponsored a study to analyze energy savings achieved through various types of building system controls. The referenced savings is based on the “Advanced Sensors and Controls for Building Applications: Market Assessment and Potential R&D Pathways,” document posted for public use April 2005. The study has found that commercial buildings have the potential to achieve significant energy savings through the use of building controls. The average energy savings are as follows based on the report:

- Occupancy Sensors for Lighting Control 20% - 28% energy savings.

Savings resulting from the implementation of this ECM for energy management controls are estimated to be 25% of the total light energy controlled by occupancy sensors and daylight sensors (The majority of the savings is expected to be after school hours when rooms are left with lights on)

This ECM includes installation of ceiling or switch mount sensors for individual offices, classrooms, large bathrooms, and libraries. Sensors shall be manufactured by Sensorswitch, Watt Stopper or equivalent. The **Investment Grade Lighting Audit Appendix** of this report includes the summary of lighting controls implemented in this ECM and outlines the proposed controls, costs, savings, and payback periods. The calculations adjust the lighting power usage by the applicable percent savings for each area that includes lighting controls.

Energy Savings Calculations:

$$\text{Energy Savings} = (\% \text{ Savings} \times \text{Controlled Light Energy (kWh/Yr)})$$

$$\text{Savings.} = \text{Energy Savings (kWh)} \times \text{Ave Elec Cost} \left(\frac{\$}{\text{kWh}} \right)$$

Cost and Incentives:

Installation cost per dual-technology sensors (Basis: Sensor switch or equivalent) are as follows:

Dual Technology Occupancy Sensor - Switch Mount	\$125 per installation
Dual Technology Occupancy Sensor - Remote Mount	\$450 per installation
Dual Tech. Occupancy Sensor w/2 Pole Relay - Remote Mount	\$500 per installation
Daylight Sensor (Sensor switch PP-20 & CM-PC or equal)	\$400 per installation

Cost includes material and labor.

From the **NJ Smart Start® Program Incentives Appendix**, the installation of a lighting control device warrants the following incentive:

Occupancy Sensor Fixture Mounted (existing facility only) = \$20 per sensor

Occupancy Sensor Remote Mounted (existing facility only) = \$35 per sensor

SmartStart® Incentive = (# of wall mount × \$ 20) + (# of ceiling mount × \$35)

SmartStart® Incentive = (179 wall mount × \$ 20) + (72 ceiling mount × \$35) = \$6,100

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$54,775
NJ Smart Start Equipment Incentive (\$):	\$6,100
Net Installation Cost (\$):	\$48,675
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$9,099
Total Yearly Savings (\$/Yr):	\$9,099
Estimated ECM Lifetime (Yr):	15
Simple Payback	5.3
Simple Lifetime ROI	180.4%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$136,478
Internal Rate of Return (IRR)	17%
Net Present Value (NPV)	\$59,942.71

ECM #3: Install Energy Star® Rated Window AC Units

Description:

The primary source of cooling for the majority of the perimeter offices throughout the facility is window air conditioners. There are over 200 window AC units and these units vary in size, capacity and efficiency. The units have been replaced on an “as needed” basis throughout the complex. Some window AC units are old and inefficient.

While some of the units are new, many of the units are significantly older and inefficient. It is recommended to utilize the energy star ratings as a minimum standard for replacing any window unit that is in need of replacement. Existing units that are old, however still working should be considered for replacement if the efficiency is below 8.0 to 8.5 EER. Window AC units that are over 10 years old are very likely to fall in this efficiency range.

This ECM shows the savings and payback for inefficient window air conditioners with new, Energy Star rated units. Qualifying product list can be found at Energy Star website at: www.energystar.gov/products. Although energy star rated products provide a valuable benchmark, it is recommended to consider even higher EER ratings for potential AC unit replacements where available.

Energy Savings Calculations:

Average Summer Electric Cost: \$0.165/kWh (Estimated)
 Typical AC Unit Size: 18,000 BTU/HR

Estimated Full Load Hours of Unit: 800/Year

$$\text{Energy Savings, kWh} = \text{Cooling Capacity, } \frac{\text{BTU}}{\text{Hr}} \times \left(\frac{1}{\text{EER}_{\text{Old}}} - \frac{1}{\text{EER}_{\text{New}}} \right) \times \frac{\text{Full Load Hours}}{1000 \frac{\text{W}}{\text{kWh}}}$$

$$\text{Demand Savings, kW} = \frac{\text{Energy Savings (kWh)}}{\text{Hours of Cooling}}$$

$$\text{Cooling Cost Savings} = \text{Energy Savings (kWh)} \times \text{Average Summer Elec. Cost} \left(\frac{\$}{\text{kWh}} \right)$$

The typical unit size at this facility is 18,000 BTU/HR. The estimated installation cost is estimated to be \$625 per window AC unit (\$475 Materials). This is based on installation of the window AC units by Bergen County staff at a cost of \$100 per unit for small AC units (12,000 BTU/HR and below), and \$150 per units for larger AC units (18,000 BTU/HR and above).

WINDOW AC UNIT CALCULATIONS								
Capacity BTU/H	Full Load Hrs	Typical Eff. (10 Yrs & Older) EER	New Eff. EER	Energy Savings kWh	Demand Savings kW	Cooling Cost Savings	Net Installed Cost	Simple Payback
6,000	800	8.5	10.7	116	0.15	\$19	\$300	15.7
8,000	800	8.5	10.8	160	0.20	\$26	\$350	13.2
12,000	800	8.5	10.8	241	0.30	\$40	\$400	10.1
18,000	800	8.5	10.7	348	0.44	\$57	\$625	10.9
24,000	800	8	9.4	357	0.45	\$59	\$725	12.3

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$625
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$625
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$57
Total Yearly Savings (\$/Yr):	\$57
Estimated ECM Lifetime (Yr):	10
Simple Payback	10.9
Simple Lifetime ROI	-8.0%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$575
Internal Rate of Return (IRR)	-1%
Net Present Value (NPV)	(\$134.74)

ECM #4: Valve Blanket and Pipe Insulation

Description:

The boiler plant supplies steam to the facility for heating season. The piping remains heated at over 200°F continuously during this period (approximately 6 months). Un-insulated piping has significant heat losses due to the exposure of the steel piping to the surrounding air. Insulated piping has a heat loss which is a small fraction of the heat loss from un-insulated piping. It was noted that the piping around some of the air handling units, condensate pumps and boilers were missing insulation including numerous valves throughout the facility.

Based on the site survey approximately 100 ft of average 4" steel pipe was not insulated including 10 of the large diameter pipe valves/fittings. Valve blankets are designed to provide insulation value over large hydronic valves that must remain accessible. This ECM includes installation of valve blankets on all exposed boiler system valves and insulation of all un-insulated piping within the boiler room.

Energy Savings Calculations:

Heat Loss for un-insulated steel piping is based on ASHRAE 2009 Fundamentals – “Insulation for Mechanical Systems”

Bare Steel Piping Heat Loss 4" pipe: 339 BTU/HR per Linear FT (125°F Temp Difference)

$$\text{Heat Loss} \frac{\text{BTU}}{\text{HR}} \text{ per Linear FT} = \frac{1}{R - \text{Value}} \times \text{Pipe Dia (FT)} \times 3.14 \times (\text{Pipe Temp (°F)} - \text{Ambient Temp (°F)})$$

$$\text{Heat Loss} \frac{\text{BTU}}{\text{HR}} = \text{Heat Loss} \frac{\text{BTU}}{\text{HR}} \text{ per Linear FT} \times \text{Length of Uninsulated Pipe}$$

$$\text{Energy Use, Therms} = \frac{\text{Heat Loss} \frac{\text{BTU}}{\text{HR}} \times \text{Operating Hrs}}{\text{Heating System Eff. (\%)} \times \text{Fuel Heat Value} \frac{\text{BTU}}{\text{Therm}}}$$

$$\text{Heating Energy Cost Savings} = \text{Energy Use, Therms} \times \text{Cost of Nat Gas} \left(\frac{\$}{\text{Therm}} \right)$$

There is no maintenance savings due to implementation of this ECM.

VALVE BLANKET INSULATION CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Bare Pipe	Insulation Blanket	
Length of Un-Insulated Pipe Including Valves	100	100	-
Average Pipe Diameter (In)	4	4	-
Blanket Insulation R-value	0	6	6
Temperature Difference Pipe to Ambient (°F)	125	125	-
Pipe Heat Loss - 4" Pipe (BTU/Hr per FT)	339	22	317
Heat Loss (BTU/Hr)	33,900	2,181	31,719
Heating System Operating Hrs	4380	4380	-
Energy Loss (kBtus)	148,482	9,551	138,931
Heating System Eff (%)	70%	70%	-
Fuel Heat Value (BTU/Therm)	100,000	100,000	-
Nat Gas Cost (\$/Therm)*	1.00	1.00	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Nat Gas Usage (Therms)	2,121	136	1,985
Energy Cost (\$)	\$2,121	\$136	\$1,985
COMMENTS:	Bare Pipe Heat Loss value is based on ASHRAE 2009 Fundamentals "Insulation for Mechanical Systems" * Natural Gas Cost Estimated		

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$5,500
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$5,500
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$1,985
Total Yearly Savings (\$/Yr):	\$1,985
Estimated ECM Lifetime (Yr):	15
Simple Payback	2.8
Simple Lifetime ROI	441.3%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$29,771
Internal Rate of Return (IRR)	36%
Net Present Value (NPV)	\$18,193.59

ECM #5: Install Variable Frequency Drives

Description:

Majority of the pumps and fans in this facility run at a constant speed. Variable speed drives can be installed to drive some of these pumps and fans to save energy.

The chilled water systems at the Justice Center utilize constant speed pumps to circulate chilled water throughout the facility. Based on the survey of the existing equipment it appears that the air handling units utilize a combination of 2-way and 3-way control valves for flow control. 2-way control valves provide flow through the heat exchanger equipment only when there is a call for heating or cooling, unlike 3-way control valves that allow constant flow of the water loop. 3-way control valves require full pumping energy continuously, while 2-way control valves allow the system to reduce flow when it is not needed. The result of this mixed control system forces the system flow to vary with load, however the pump speed remains the same. The overall pump energy is increased due to the constant speed of the pump.

This measure includes installation of variable frequency drives on chilled water pumps and capping off the bypass port on the 3-way control valves which effectively turns the valves into “2-way” control valves. When the air handling unit is not calling for heating, the control valve closes reducing overall flow of the system. Variable frequency drives allow the pumps to slow down in response to a reduction in overall system flow. The reduction in operating flow allows the pumps to reduce energy consumption for all hours that the heating system is not at its peak load. The VFD control is based on a differential pressure sensor in the water loop to measure demand for water.

This ECM also includes installation of Variable Frequency Drives on the two (2) existing 10 HP cooling tower fans. Condenser water cooling for the water cooled chiller in this facility is achieved with two (2) induced draft cooling towers with constant speed fans. The fans currently operate based on ON/OFF controls to achieve condenser water temperature controls. A variable frequency drive can be installed on each cooling tower fan in order to vary the speed based on the condenser water temperature and the wet bulb temperature of the ambient air.

As a part of this ECM, the existing pump and fan motors for VFD consideration need to be replaced with inverter duty motors that meet NEMA Premium Efficiency Standard, which also helps to reduce energy consumption.

Energy and cost savings calculations are based on calculation software “PumpSave v4.2,” and “FanSave v4.0” provided by ABB. The PumpSave calculation software is used to estimate the pumping energy for variable speed pump systems. The chilled water loop pump operation is estimated to be 2,000 Hrs per year. The pump flow, HD, and resultant energy are calculated based on the existing pump horse power installed.

Following table summarizes a list of fans and pumps for variable frequency drive considerations.

VARIABLE SPEED DRIVE CALCULATIONS			
EQUIPMENT	NOMINAL POWER, HP	ESTIMATED ACTUAL POWER, HP	ESTIMATED HOURS of OPERATION
CW Pump - P1	7.5	6.3	2,000
CW Pump - P2	7.5	6.3	1,000
CW Pump - P3	7.5	6.3	1,000
CW Pumps (Air cooled Chiller #1)	20	17.4	2,000
	20	17.4	1,000
CW Pumps (Air cooled Chiller #2)	20	17.4	2,000
	20	17.4	1,000
Cooling Tower, Fan #1	10	8.5	2,000
Cooling Tower, Fan #2	10	8.5	1,000
Notes			

Energy Savings Calculations:

The existing energy consumption is based a typical pump energy curve for “Throttled flow control.” The throttled flow control is compared with variable speed control as a result of the VFD installation.

$$\text{Energy Cons. (kWh)} = \text{Power (HP)} \times 0.746 \left(\frac{\text{KW}}{\text{HP}} \right) \times \text{Operation (Hrs.)}$$

$$\text{Energy Cost} = \text{Energy Usage (kWh)} \times \text{Ave Electric Cost} \left(\frac{\$}{\text{kWh}} \right)$$

Chilled Pumping Energy Savings (Throttled Control):

(Multistack Water cooled chiller system)

PumpSave 4.2 Energy saving calculator for pumps

System Data
 Liquid density: 62 lb/ft³ Static head: 1 ft

Pump Data
 Nominal volume flow: 300 gpm Efficiency: 80%
 Nominal head: 60 ft Max head: 60 ft

Existing Flow Control
 Throttling control

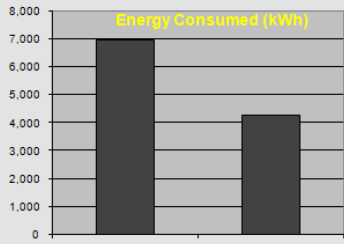
Motor and Supply Data
 Supply voltage: 230 V (1-ph) 200/208/230/240 V 1-ph
 Motor power: 7.5 Hp Required motor power: 6.3 Hp including 10% safety margin
 Motor efficiency: 91.7 %

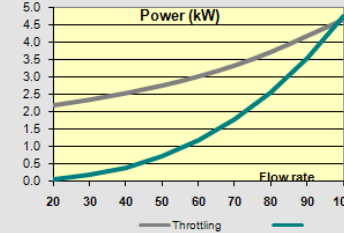
Operating Profile
 Annual running time: 2,000 h

Measurement Units
 Metric US

Calculated by: E. G.
Calculated for: Chilled water pumps
Pump ID: #1, 2, 3

Improved Control by ABB Drive:
 ACS550
 No suitable type found. [Copy to clipboard](#)

Energy Consumption


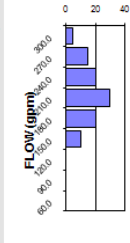
Power (kW)


Results
 Saving percentage: 38.9 %
 Annual energy consumption:
 with existing control method: 7 MWh
 with improved control method: 4 MWh
 Annual energy saving: 3 MWh
 Annual CO₂ reduction: 1 t
 CO₂ emission/unit: 0.5 lb/kWh

Economic Data
 Currency unit: \$
 Energy price: 0 \$/kWh
 Investment cost: 0 \$
 Interest rate: 4%
 Service life: 10 years

Economic Results
 Annual saving: \$
 Payback period: years
 Net present value: \$

DEF AULT
 100

Flow (gpm)


Buttons: Auto-adjust screen size, Save calculation, Send to default printer, Close program

ABB

(Air cooled chillers)

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density lb/ft³ Static head ft

Pump Data

Nominal volume flow gpm Efficiency

Nominal head ft Max head ft

Existing Flow Control

Motor and Supply Data

Supply voltage 200/208/230/240 V 1-ph
 Motor power Hp Required motor power: 17.4 Hp including 10% safety margin
 Motor efficiency ?

Operating Profile

Annual running time h

DEF	AULT	%	h	at	flow
5		%	100	h	at nom. flow
15		%	300	h	at 90% flow
20		%	400	h	at 80% flow
30		%	600	h	at 70% flow
20		%	400	h	at 60% flow
10		%	200	h	at half flow
0		%	0	h	at 40% flow
0		%	0	h	at 30% flow
0		%	0	h	at 20% flow

100

Measurement Units

☒ Metric ☐ US

Calculated by: Calculated for: Pump ID:

Improved Control by ABB Drive : No suitable type found.

Energy Consumption

Throttling VSD

Power (kW)

Throttling VSD

Results

Saving percentage

Annual energy consumption:
 with existing control method MWh
 with improved control method MWh
 Annual energy saving MWh
 Annual CO₂ reduction t
 CO₂ emission/unit lb/kWh

Economic Data

Currency unit Energy price \$/kWh
 Investment cost \$ Interest rate Service life years

Economic Results

Annual saving \$ Payback period years Net present value \$

Cooling Tower Fan Energy Savings (ON/OFF Control):

FanSave Energy saving calculator for fans
4.0.B Traditional flow control methods compared to variable speed AC drive control

EQUIPMENT DATA - EXISTING

Fan data
Fan type: Centrifugal Impeller type: Backward curved (B)
Nominal volume flow: ##### cfm
Total pressure increase: 1 in-H₂O = 0.04 psi Efficiency: 75%

Transmission
Nominal efficiency: 95.0 %

Existing flow control method: Cycling (on/off)

Motor data
Supply voltage: 460 V 440/460/480 V
Motor power: 10 Hp Required motor power: 8.5 Hp including 10% safety margin
Motor efficiency: 92.4 %

Operating profile
Annual running time: 2,000 h

DEF A U L T
5% = 100 h at nom. flow
10% = 200 h at 90% flow
25% = 500 h at 80% flow
25% = 500 h at 70% flow
20% = 400 h at 60% flow
10% = 200 h at half flow
5% = 100 h at 40% flow
% = 0 h at 30% flow
% = 0 h at 20% flow

Flow (cfm) bar chart: 35000, 31500, 28000, 24500, 21000, 17500, 14000, 10500, 7000

GENERAL DATA

Measurement units: Metric US
Calculated by: E.G.
Calculated for: Cooling Towers
Fan ID: Tower #1, 2

EQUIPMENT DATA - NEW

Improved flow control by: ABB standard drive (ACS550)
ACS550-U1-015A-4 Copy to clipboard

SFP
Specific fan power: 0.4 kW/(m³/s)

Auto-adjust screen size Save calculation
Send to default printer Close program

Economic data
Currency: \$
Energy price: \$/kWh
Investment cost: \$
Interest rate: %
Service life: years

RESULTS

Energy & environmental
Electric power consumption of fan
Cycling (on/off) AC drive control
kW vs Air flow rate (cfm) graph

Saving percentage: 39.6 %
Annual energy consumption:
with existing control method: 8,806 kWh
with improved control method: 5,316 kWh
Annual energy saving: 3,491 kWh
Annual CO₂ reduction: 1,745 lb
CO₂ emission per unit: 0.5 lb/kWh

Economic results
Annual money saving: \$
Payback period: years
Net present value: \$?

ABB

Below is a summary of calculations for installation of VFDs on pump and fan motors.

VARIABLE SPEED DRIVE CALCULATIONS						
EQUIPMENT	NOMINAL POWER, HP	HOURS of OPERATION	EXISTING ENERGY CONSUMPTION, kWh	IMPROVED ENERGY CONSUMPTION, kWh	ENERGY SAVINGS, kWh	ENERGY SAVINGS, \$
Pump - P1	7.5	2000	7,577	4,242	3,335	\$500
Pump - P2	7.5	1000	3,789	2,121	1,668	\$250
Pump - P3	7.5	1000	3,789	2,121	1,668	\$250
CWPs (Air cooled Chiller #1)	20	2000	19,977	11,566	8,411	\$1,262
	20	1000	9,989	5,783	4,206	\$631
CWPs (Air cooled Chiller #2)	20	2000	19,977	11,566	8,411	\$1,262
	20	1000	9,989	5,783	4,206	\$631
Cooling Tower #1	10	2000	9,687	5,316	4,371	\$656
Cooling Tower #2	10	1000	4,844	2,658	2,186	\$328
Total					38,460	\$5,769

Installation cost for nine (9) VFDs, nine (9) inverter duty motors, piping work, re-balancing, capping of 3-way valves and controls is estimated to be \$136,000 (\$70,000 Materials).

From the **NJ Smart Start[®] Program Incentives Appendix**, the installation of Variable Frequency Drives and Premium Efficiency Motors warrants the following incentive:

SMART START INCENTIVES				
EQUIPMENT	NOMINAL POWER, HP	INCENTIVE CATEGORY	INCENTIVE AMOUNT	TOTAL
CW Pump - P1	7.5	Premium Efficiency Motors	\$90 per HP 7.5 HP Motors	\$675
CW Pump - P2	7.5			\$675
CW Pump - P3	7.5			\$675
CW Pumps	20		\$65 per HP for 20 HP motors	\$1,300
(Air cooled Chiller #1)	20			\$1,300
CW Pumps	20			\$1,300
(Air cooled Chiller #2)	20			\$1,300
Cooling Tower, Fan #1	10		\$120 per HP 10 HP motors	\$1,200
Cooling Tower, Fan #2	10			\$1,200
CW Pumps	20	VFD - Chilled Water Pumps	\$60 per HP 20+ HP motors	\$1,200
(Air cooled Chiller #1)	20			\$1,200
CW Pumps	20			\$1,200
(Air cooled Chiller #2)	20			\$1,200
Cooling Tower, Fan #1	10	VFD - Cooling Tower Fans	\$60 per HP 10+ HP Motors	\$600
Cooling Tower, Fan #2	10			\$600
TOTAL				\$15,625

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$136,000
NJ Smart Start Equipment Incentive (\$):	\$15,625
Net Installation Cost (\$):	\$120,375
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$5,769
Total Yearly Savings (\$/Yr):	\$5,769
Estimated ECM Lifetime (Yr):	15
Simple Payback	20.9
Simple Lifetime ROI	-28.1%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$86,535
Internal Rate of Return (IRR)	-4%
Net Present Value (NPV)	(\$51,504.97)

ECM #6: Air Conditioning Unit Upgrades

Description:

Air conditioning for portion of the Bergen County Justice Center is provided with a combination of packaged unitary and split air conditioners and heat pumps. Some these units are inefficient compared to the current equipment standards. In addition, many of these units are over 15 years old, which is the ASHRAE recommended maximum service life for this type of equipment. The older and inefficient unitary air conditioners can be replaced with new high efficiency units for energy savings. New air conditioners provide higher full load and part load efficiencies due to advances in inverter motor technologies, heat exchangers and refrigerants.

This ECM includes one-for-one replacement of the older unitary air conditioning units with new higher efficiency systems. It is recommended to fully evaluate the capacity needed for all new systems prior to moving forward with this ECM. A summary of the unit replacements for this ECM can be found in the table below:

IMPLEMENTATION SUMMARY - AC UNITS					
ECM INPUTS	SERVICE FOR	NUMBER OF UNITS	COOLING CAPACITY, BTU/HR	TOTAL CAPACITY, TONS	REPLACE UNIT WITH
RTU - AC #1 & 2 Mammoth	Rooms 425 & 427	2	696,000	116	Aaon RN - 60 Ton
RTU -Carrier Old BCI	Old BCI Area	2	120,000	20	Trane YHC-120
5 Ton Split AC Unit - Bryant	Located on roof - south	2	60,000	10	Rheem 060JEC Cond. Unit R410 coil
10 Ton Split AC Unit - Carrier	Courtroom 260	1	120,000	10	Carrier 38AUD
15 Ton Split AC Unit - Carrier	Courtroom 260	1	180,000	15	Trane Odyssey - 15 Ton
Sanyo Ductless Split	Old BCI Area	1	32,000	2.7	Mitsubishi Mr. Slim
7.5 Ton Split AC Unit - Bryant	Room 116	1	90,000	7.5	Trane Odyssey - 7.5 Ton
2 Ton Split Unit	Attorney Room	1	24,000	2	Mitsubishi Mr. Slim
Total		2		183	

IMPLEMENTATION SUMMARY - HEAT PUMPS					
ECM INPUTS	SERVICE FOR	NUMBER OF UNITS	COOLING CAPACITY, BTU/HR	TOTAL CAPACITY, TONS	REPLACE UNIT WITH
5 Ton Trane Split Heat Pump	Penthouse Storage	1	60,000	5	Rheem - L-*AZ Series
EMI Split Heat Pump	Computer Room	1	22,000	1.8	Mitsubishi Mr. Slim
Total		2	82,000	6.8	

The recommended units are one for one style replacements with matching capacity of the new units to the old units.

Energy Savings Calculations:

Cooling Energy Savings:

Seasonal energy consumption of the air conditioners at the cooling mode is calculated with the equation below:

$$\text{Energy Savings, kWh} = \text{Cooling Capacity, } \frac{\text{BTU}}{\text{Hr}} \times \left(\frac{1}{\text{SEER}_{\text{Old}}} - \frac{1}{\text{SEER}_{\text{New}}} \right) \times \frac{\text{Operation Hours}}{1000 \frac{\text{W}}{\text{kWh}}}$$

$$\text{Demand Savings, kW} = \frac{\text{Energy Savings (kWh)}}{\text{Hours of Cooling}}$$

$$\text{Cooling Cost Savings} = \text{Energy Savings, kWh} \times \text{Cost of Electricity} \left(\frac{\$}{\text{kWh}} \right)$$

Heating Energy Savings:

Seasonal energy consumption of the heat pumps at the heating mode is calculated with the equation below:

$$\begin{aligned} \text{Energy Savings, kWh} \\ = \text{Heating Capacity, } \frac{\text{BTU}}{\text{Hr}} \times \left(\frac{1}{\text{HSPF}_{\text{Old}}} - \frac{1}{\text{HSPF}_{\text{New}}} \right) \times \frac{\text{Operation Hours}}{1000 \frac{\text{W}}{\text{kWh}}} \end{aligned}$$

$$\text{Heating Cost Savings} = \text{Energy Savings, kWh} \times \text{Cost of Electricity} \left(\frac{\$}{\text{kWh}} \right)$$

ENERGY SAVINGS CALCULATIONS - AC UNITS							
ECM INPUTS	COOLING CAPACITY, BTU/Hr	ANNUAL COOLING HOURS	EXISTING UNITS (S)EER	SPLIT UNITS (S)EER	# OF UNITS	ENERGY SAVINGS kWh	DEMAND SAVINGS kW
RTU - AC #1 & 2 Mammoth	696,000	800	10 EER	10.5 EER	2	5,303	6.6
RTU -Carrier Old BCI	120,000	800	10 EER	12.5 EER	2	3,840	4.8
5 Ton Split AC Unit - Bryant	60,000	1,200	10 SEER	15 SEER	2	4,800	4.0
10 Ton Split AC Unit - Carrier	120,000	800	9.4 EER	11.2 EER	1	1,641	2.1
15 Ton Split AC Unit - Carrier	180,000	800	9.1 EER	11 EER	1	2,733	3.4
Sanyo Ductless Split	32,000	1,200	10 SEER	15 SEER	1	1,280	1.1
7.5 Ton Split AC Unit - Bryant	90,000	800	9 EER	11.2 EER	1	1,571	2.0
2 Ton Split Unit	24,000	1,200	9 SEER	15 SEER	1	1,280	1.1
Total					2	22,449	25.0

ENERGY SAVINGS CALCULATIONS - HEAT PUMPS									
ECM INPUTS	COOLING CAPACITY, BTU/Hr	ANNUAL COOLING HOURS	ANNUAL HEATING HOURS	EXISTING UNITS (S)EER	SPLIT UNITS (S)EER	# OF UNITS	COOLING ENERGY SAVINGS kWh	HEATING ENERGY SAVINGS kWh	DEMAND SAVINGS kW
5 Ton Trane Split Heat Pump	60,000	800	2,000	10 SEER 7 HSPF	15.5 SEER	1	1,703	5,143	2.1
EMI Split Heat Pump	22,000	800	2,000	10 SEER 7 HSPF	16 SEER 11 HSPF	1	660	2,286	0.8
Total						2	2,363	7,429	3.0

Project Cost, Incentives and Maintenance Savings

Summary of cost, savings and payback for this ECM is below.

COST & SAVINGS SUMMARY - AC UNITS							
ECM INPUTS	INSTALLED COST	# OF UNITS	TOTAL COST	REBATES	NET COST	ENERGY SAVING	PAY BACK YEARS
RTU - AC #1 & 2 Mammoth	\$45,000	2	\$90,000	\$8,352	\$81,648	\$875	93.3
RTU -Carrier Old BCI	\$17,500	2	\$35,000	\$1,460	\$33,540	\$634	52.9
5 Ton Split AC Unit - Bryant	\$8,000	2	\$16,000	\$920	\$15,080	\$792	19.0
10 Ton Split AC Unit - Carrier	\$16,000	1	\$16,000	\$730	\$15,270	\$271	56.4
15 Ton Split AC Unit - Carrier	\$18,000	1	\$18,000	\$1,185	\$16,815	\$451	37.3
Sanyo Ductless Split	\$7,000	1	\$7,000	\$245	\$6,755	\$211	32.0
7.5 Ton Split AC Unit - Bryant	\$16,000	1	\$16,000	\$548	\$15,453	\$259	59.6
2 Ton Split Unit	\$7,000	1	\$7,000	\$184	\$6,816	\$211	32.3
Total		2	\$205,000	\$13,624	\$191,376	\$3,704	51.7

COST & SAVINGS SUMMARY - HEAT PUMPS							
ECM INPUTS	INSTALLED COST	# OF UNITS	TOTAL COST	REBATES	NET COST	ENERGY SAVING	PAYBACK YEARS
5 Ton Trane	\$8,400	1	\$8,400	\$460	\$7,940	\$281	28.3
EMI Split	\$3,500	1	\$3,500	\$169	\$3,331	\$109	30.6
Total		2	\$11,900	\$629	\$11,271	\$390	28.9

From the NJ Smart Start[®] Program appendix, the replacement of split system AC units and unitary systems with high efficiency AC systems falls under the category “Unitary HVAC Split System” and warrants an incentive based on efficiency (EER/SEER). The program incentives are calculated as follows:

$$\text{SmartStart}^{\text{®}} \text{ Incentive} = (\text{Cooling Tons} \times \$/\text{Ton Incentive})$$

UNITARY / SPLIT SYSTEM AC UNITS REBATE SUMMARY				
UNIT DESCRIPTION	UNIT EFFICIENCY	REBATE \$/TON	PROPOSED CAPACITY TONS	TOTAL REBATE \$
≥63 tons	9.5 EER	40	0	\$0
≥30 to 63 tons	9.5 EER	72	116	\$8,352
≥20 to 30 tons	10.5 EER	79	0	\$0
≥ 11.25 to < 20 tons	11.5 EER	79	15	\$1,185
≥ 5.4 to < 11.25 tons	11.5 EER	73	37.5	\$2,738
5.4 tons or less Unitary AC and Split System	≥14 SEER	\$92	22	\$1,978
TOTAL			190	\$14,253

There is no significant maintenance savings due to implementation of this ECM.

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$216,900
NJ Smart Start Equipment Incentive (\$):	\$14,253
Net Installation Cost (\$):	\$202,648
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$4,094
Total Yearly Savings (\$/Yr):	\$4,094
Estimated ECM Lifetime (Yr):	15
Simple Payback	49.5
Simple Lifetime ROI	-69.7%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	\$61,410
Internal Rate of Return (IRR)	-12%
Net Present Value (NPV)	(\$153,773.60)

ECM #7: Install NEMA Premium® Efficiency Motors

Description:

The improved efficiency of the NEMA Premium® efficient motors is primarily due to better designs with use of better materials to reduce losses. Surprisingly, the electricity used to power a motor represents 95 % of its total lifetime operating cost. Because many motors operate continuously 24 hours a day, even small increases in efficiency can yield substantial energy and dollar savings.

The electric motors driving the chilled water pumps, condenser water pumps, air handling unit supply fans and cooling tower fans are the candidates for replacing with premium efficiency motors. These standard efficiency motors run considerable amount of time over a year.

This energy conservation measure replaces existing electric motors over 5 HP or more with NEMA Premium® efficiency motors. NEMA Premium® is the most efficient motor designation in the marketplace today.

Energy Savings Calculations:

$$\text{Electric usage, kWh} = \frac{\text{HP} \times \text{LF} \times 0.746 \times \text{Hours of Operation}}{\text{Motor Efficiency}}$$

where, HP = Motor Nameplate Horsepower Rating

LF = Load Factor

Motor Efficiency = Motor Nameplate Efficiency

$$\text{Electric Usage Savings, kWh} = \text{Electric Usage}_{\text{Existing}} - \text{Electric Usage}_{\text{Proposed}}$$

$$\text{Electric Usage Savings, kWh} = \text{Electric Usage}_{\text{Existing}} - \text{Electric Usage}_{\text{Proposed}}$$

$$\text{Electric cost savings} = \text{Electric Usage Savings} \times \text{Electric Rate} \left(\frac{\$}{\text{kWh}} \right)$$

Below is the implementation summary of this ECM:

IMPLEMENTATION SUMMARY					
EQMT ID	FUNCTION	MOTOR HP	HOURS OF OPERATION	EXISTING EFFICIENCY	NEMA PREMIUM EFFICIENCY
P1	Chilled Water Pump	7.5	2,000	84.0%	91.7%
P2	Chilled Water Pump	7.5	1,000	84.0%	91.7%
P3	Chilled Water Pump	7.5	1,000	84.0%	91.7%
P4	Condenser Watet Pump	10	2,000	89.5%	92.4%
P5	Condenser Watet Pump	10	1,000	89.5%	92.4%
P6	Condenser Watet Pump	10	1,000	89.5%	92.4%
P	Chilled Water Pump - Air Cooled Chiller	20	2,000	88.5%	93.0%
P	Chilled Water Pump - Air Cooled Chiller	20	2,000	88.5%	93.0%
P	Chilled Water Pump - Air Cooled Chiller	20	1,000	88.5%	93.0%
Fan #4	Supply Fan Motor	10	4,380	89.5%	92.4%
Fan Motor	Toilet Fresh Air Fan Motor	7.5	4,380	88.5%	91.7%
AC-1	RTU - Mammouth	15	4,380	88.5%	92.4%
AC-2	RTU - Mammouth	15	4,380	88.5%	92.4%
RTU	McQuay RTU - Above boiler room	10	4,380	89.5%	92.4%
RTU	McQuay RTU - Above boiler room	5	4,380	87.5%	90.2%
RTU	Trane RTU Supply Fan- W. Roof- VFD	20	4,380	91.0%	93.0%
RTU	Trane RTU Exhaust Fan- West Roof	15	4,380	91.0%	92.4%
AHU-2	Supply Fan Motor	7.5	4,380	88.5%	91.7%
AHU-3	Supply Fan Motor	5	4,380	87.5%	90.2%
AHU-5	Supply Fan Motor	5	4,380	87.5%	90.2%
AHU-7	Supply Fan Motor	5	4,380	87.5%	90.2%
CT	Cooling Tower Fan	7.5	2,000	84.0%	91.7%
CT	Cooling Tower Fan	7.5	1,000	84.0%	91.7%
* Motor efficiency N/A. Estimated based on EPA Act of 1992					

The calculations were carried out and the results are tabulated in the table below:

PREMIUM EFFICIENCY MOTOR CALCULATIONS							
EQMT ID	MOTOR HP	LOAD FACTOR	EXISTING EFFICIENCY	NEMA PREMIUM EFFICIENCY	POWER SAVINGS kW	ENERGY SAVINGS kWh	COST SAVINGS
P1	7.5	90%	84.0%	91.7%	0.50	1,012	\$172
P2	7.5	90%	84.0%	91.7%	0.50	506	\$86
P3	7.5	90%	84.0%	91.7%	0.50	506	\$86
P4	10	90%	89.5%	92.4%	0.24	473	\$80
P5	10	90%	89.5%	92.4%	0.24	237	\$40
P6	10	90%	89.5%	92.4%	0.24	237	\$40
P	20	90%	88.5%	93.0%	0.73	1,476	\$251
P	20	90%	88.5%	93.0%	0.73	1,476	\$251
P	20	90%	88.5%	93.0%	0.73	738	\$125
Fan #4	10	90%	89.5%	92.4%	0.24	1,037	\$176
Fan Motor	7.5	90%	88.5%	91.7%	0.20	874	\$149
AC-1	15	90%	88.5%	92.4%	0.48	2,115	\$360
AC-2	15	90%	88.5%	92.4%	0.48	2,115	\$360
RTU	10	90%	89.5%	92.4%	0.24	1,037	\$176
RTU	5	90%	87.5%	90.2%	0.11	506	\$86
RTU	20	90%	91.0%	93.0%	0.32	1,397	\$238
RTU	15	90%	91.0%	92.4%	0.17	738	\$126
AHU-2	7.5	90%	88.5%	91.7%	0.20	874	\$149
AHU-3	5	90%	87.5%	90.2%	0.11	506	\$86
AHU-5	5	90%	87.5%	90.2%	0.11	506	\$86
AHU-7	5	90%	87.5%	90.2%	0.11	506	\$86
CT	7.5	90%	84.0%	91.7%	0.50	1,012	\$172
CT	7.5	90%	84.0%	91.7%	0.50	506	\$86
TOTAL					8.9	21,129	\$3,592

Equipment Cost and Incentives

Below is a summary of SmartStart Building® incentives for premium efficiency motors on chilled water pumps:

INCENTIVES	
HORSE POWER	NJ SMART START INCENTIVE
5	\$60
7.5	\$90
10	\$100
15	\$115
20	\$125
25	\$130

The following table outlines the summary of motor replacement costs and incentives:

MOTOR REPLACEMENT SUMMARY						
EQMT ID	MOTOR POWER HP	INSTALLED COST	SMART START INCENTIVE	NET COST	TOTAL SAVINGS	SIMPLE PAYBACK
P1	7.5	\$1,971	\$90	\$1,881	\$172	10.9
P2	7.5	\$1,971	\$90	\$1,881	\$86	21.9
P3	7.5	\$1,971	\$90	\$1,881	\$86	21.9
P4	10	\$2,560	\$100	\$2,460	\$80	30.6
P5	10	\$2,560	\$100	\$2,460	\$40	61.1
P6	10	\$2,560	\$100	\$2,460	\$40	61.1
P	20	\$4,635	\$125	\$4,510	\$251	18.0
P	20	\$4,635	\$125	\$4,510	\$251	18.0
P	20	\$4,635	\$125	\$4,510	\$125	35.9
Fan #4	10	\$2,560	\$100	\$2,460	\$176	14.0
Fan Motor	7.5	\$1,971	\$90	\$1,881	\$149	12.7
AC-1	15	\$3,652	\$115	\$3,537	\$360	9.8
AC-2	15	\$3,652	\$115	\$3,537	\$360	9.8
RTU	10	\$2,560	\$100	\$2,460	\$176	14.0
RTU	5	\$1,519	\$60	\$1,459	\$86	17.0
RTU	20	\$4,635	\$125	\$4,510	\$238	19.0
RTU	15	\$3,652	\$115	\$3,537	\$126	28.2
AHU-2	7.5	\$1,971	\$90	\$1,881	\$149	12.7
AHU-3	5	\$1,519	\$60	\$1,459	\$86	17.0
AHU-5	5	\$1,519	\$60	\$1,459	\$86	17.0
AHU-7	5	\$1,519	\$60	\$1,459	\$86	17.0
CT	7.5	\$1,971	\$90	\$1,881	\$172	10.9
CT	7.5	\$1,971	\$90	\$1,881	\$86	21.9
TOTAL	Totals:	\$66,804	\$2,340	\$64,464	\$3,592	17.9

Energy Savings Summary:

ECM #7 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$66,804
NJ Smart Start Equipment Incentive (\$):	\$2,340
Net Installation Cost (\$):	\$64,464
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$3,486
Total Yearly Savings (\$/Yr):	\$3,486
Estimated ECM Lifetime (Yr):	15
Simple Payback	18.5
Simple Lifetime ROI	-18.9%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$52,294
Internal Rate of Return (IRR)	-3%
Net Present Value (NPV)	(\$22,845.37)

ECM #8: Install Variable Refrigerant Flow (VRF) AC System

(This ECM requires implementation of ECM #10 in order to realize heating energy savings)

Description:

Majority of the perimeter offices and some of the court rooms in the Bergen County Justice Center is air conditioned with window air conditioning units. There are approximately 208 large window units installed on the windows of the perimeter of the building. These spaces are heated with steam radiators.

Despite low initial cost, window air conditioners are inefficient and loud compared to the traditional ducted or ductless central or split air conditioning systems.

An emerging alternative to the window air conditioning systems and forced air systems is the Variable Refrigerant Flow (VRF) systems, which is a derivative of the ductless mini split air conditioning systems. A VRF system includes multiple indoor evaporators, fan coil units, refrigerant management units and control systems connected to split condensing units located outside. Major difference between conventional systems and the VRF systems is that the heating or cooling is supplied by circulating refrigerant directly to the heat transfer device within or near the conditioned space. Significant energy savings can be achieved by eliminating air and/or water circulation.

The benefits of the VRF systems include ease of installation especially during retrofits due to modular equipment, improved comfort due to flexibility in zoning and substantial increase in energy efficiency due to elimination of large fans, pumps and providing net heating and net cooling load for the building, instead of peak loads for each zone due to energy recovery between zones similar to water source heat pumps.

This ECM includes installation of a Variable Refrigerant Flow system(s) for the perimeter offices and some of the courtrooms in the Bergen County Justice Center to replace window air conditioners. The VRF system should be used for heating during mild winter conditions when the cost of heating with the VRF system in the heat pump mode is cheaper than central steam system. This ECM is based on Mitsubishi City Multi Series variable refrigerant flow system or equal without energy recovery functionality.

This ECM requires implementation of ECM #10 in order to take advantage of the heating system energy savings. Installation of thermostatic control valves will reduce steam heating output of the radiators which will be substituted by the VRF system.

Note: Sizing indicated within the calculation of this ECM is based largely on a one for one replacement of the existing window units. Owner should retain a Professional Engineer verify heating and cooling loads prior to moving forward with this ECM.

IMPLEMENTATION SUMMARY					
ECM INPUTS	SERVICE FOR	NUMBER OF UNITS	COOLING CAPACITY, BTU/HR	TOTAL CAPACITY, TONS	REPLACE UNIT WITH
Window AC Units	Perimeter offices, courtrooms	208	18,000 (Ave)	1.5	Mitsubishi City Multi Series VRF System
Total		208	18,000 (Ave)	1.5	

Average unit size is estimated.

Energy Savings Calculations:

Cooling Energy Savings:

Seasonal energy consumption of the air conditioners at the cooling mode is calculated with the equation below:

$$\text{Energy Savings, kWh} = \text{Cooling Capacity, } \frac{\text{BTU}}{\text{Hr}} \times \left(\frac{1}{\text{SEER}_{\text{Old}}} - \frac{1}{\text{SEER}_{\text{New}}} \right) \times \frac{\text{Operation Hours}}{1000 \frac{\text{W}}{\text{kWh}}}$$

$$\text{Demand Savings, kW} = \frac{\text{Energy Savings (kWh)}}{\text{Hours of Cooling}}$$

$$\text{Cooling Cost Savings} = \text{Energy Savings, kWh} \times \text{Cost of Electricity} \left(\frac{\$}{\text{kWh}} \right)$$

Heating Energy Savings:

Energy consumption of the proposed VRF system at the heating mode during the mild winter conditions (ambient temperature between 40°F – 65°F) is calculated with the equation below:

$$\text{Heating Energy Used (kWh)} = \frac{\text{Heating Capacity, } \frac{\text{BTU}}{\text{H}} \times (\text{HDD}_{65^{\circ}\text{F}} - \text{HDD}_{60^{\circ}\text{F}})}{\Delta T \times \text{COP} \times V1}$$

The natural gas energy saved by the VRF system which would otherwise be consumed by the existing steam heating system during the mild winter conditions (ambient temperature between 40°F – 65°F) is calculated with the equation below:

$$\begin{aligned} &\text{Heating Energy Saved (Therms)} \\ &= \frac{\text{Substituted Heat Capacity, } \frac{\text{BTU}}{\text{H}} \times (\text{HDD}_{65^{\circ}\text{F}} - \text{HDD}_{60^{\circ}\text{F}})}{\Delta T \times \text{Eff} \times V2} \end{aligned}$$

Where:

HDD = number of Heating Degree Days as Specified Base Temperature

ΔT = Design temperature difference, 70°F

Eff = Efficiency of Energy Utilization (Boiler efficiency)

V1 = Heating value of fuel, BTU/kWh (3,413 Btu/Hr per kWh)

V2 = Heating value of fuel, BTU/Therm (100,000 Btu/Hr per Therm)

COP = Coefficient of Performance of Heat Pumps

VRF SYSTEM CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Window Units + Steam Radiators	VRF Systyem + Steam Radiators	
Number of Units	208	208	
Heating	Gas	Heat pump + Gas	
Ave. Cooling Capacity, BTU/H	18,000	18,000	
Efficiency, SEER	10	15	
Efficiency, EER	8	12	
Substitued Heating Capacity, BTU/H	18,000	18,000	
Heating Efficiency (Gas)	70%	-	
Avg. Heat Pump Efficiency (COP)*	-	4	
Heating Degree Days (65°F)	4,873	4873	
Heating Degree Days (40°F)	881	881	
Heating Degree Days (65 - 40°F)	3,992	3992	
Annual Cooling Hours	1,200	1,200	
Elec Cost (\$/kWh)	\$0.165	\$0.165	
Natural Gas Cost (\$/Therm)	\$1.100	\$1.100	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Cooling Demand, kW	374.4	249.6	124.8
Cooling Energy Cnsmpion, kWh	449,280	299,520	149,760
Heating Energy Cnsmpion, Therms	3285	0	3,285
Heating Energy Cnsmpion, kWh	0	16,843	(16,843)
Total Electric Energy (kWh)	449,280	316,363	132,917
Total Electric Demand (KW)	374	250	124.8
Total Natural Gas, Therms	3,285	0	3,285
Electric Energy Cost (\$)	\$74,131	\$52,200	\$21,931
Total Gas Cost (\$)	\$3,613	\$0	\$3,613
Total Energy Cost (\$)	\$77,745	\$52,200	\$25,545
COMMENTS:	HDDs estimated based on Newark,NJ. Estimated COP value based on mild winter temperatures (40 - 65°F)		

Project Cost, Incentives and Maintenance Savings

From the NJ Smart Start[®] Program appendix, the installation of central DX system falls under the category “Central DX AC Systems” and warrants an incentive based on efficiency (EER). The program incentives are calculated as follows:

$$\text{SmartStart}^{\text{®}} \text{ Incentive} = (\text{Cooling Tons} \times \$/\text{Ton Incentive})$$

CENTRAL DX AC SYSTEM REBATES				
UNIT DESCRIPTION	UNIT EFFICIENCY	REBATE \$/TON	PROPOSED CAPACITY TONS	TOTAL REBATE \$
>30 to 63 tons \geq 9.5 EER	9.5 EER	72	312	\$22,464
TOTAL			312	\$22,464

Summary of cost, savings and payback for this ECM is below.

There is no significant maintenance savings due to implementation of this ECM.

Energy Savings Summary:

ECM #8 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$624,000
NJ Smart Start Equipment Incentive (\$):	\$22,464
Net Installation Cost (\$):	\$601,536
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$36,870
Total Yearly Savings (\$/Yr):	\$36,870
Estimated ECM Lifetime (Yr):	15
Simple Payback	16.3
Simple Lifetime ROI	-8.1%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$553,054
Internal Rate of Return (IRR)	-1%
Net Present Value (NPV)	(\$161,381.32)

ECM #9: Water Cooled Chiller Installation

Description:

Cooling for the majority of the Bergen County Justice Center is provided via split air handling units with chilled water coils. Chilled water is provided to these units via three (3) chillers. Two of these chillers are 160 ton air cooled chillers made by Technical Systems, while the third chiller is a 120 Ton water cooled chiller made by MultiStack.

Air cooled cooling equipment uses more energy than water cooled systems. Therefore, water cooled chillers provide significant energy savings over air cooled equipment due to the efficiency increase.

The average full load efficiency of the existing air cooled chillers is approximately 9 EER including ancillary equipment, which corresponds to 1.33 KW/Ton. The efficiency of a high efficiency centrifugal water cooled chiller is approximately 0.38 KW/Ton (IPLV). The ancillary pumping energy and cooling tower fan energy is approximately 0.14 KW/Ton. Cooling tower make-up water requirements is estimated to be 2.5 Gal/Ton-Hr.

This ECM includes the installation of two new pre-built water cooled chiller systems to replace the two (2) air cooled chillers and provide chilled water to the existing air handling units. The proposed system includes an outdoor water-cooled chiller package with condenser water pumps, a cooling tower and chilled water pumps.

The installation also includes all associated piping, labor, and controls. The ECM is based on two (2) 150 Ton McQuay model number WMC 150D Magnitude™ Water-Cooled Frictionless Centrifugal Chillers or equivalent. Sizing indicated within the calculation of this ECM is based on replacement of the total existing equipment capacity. The owner should have a Professional Engineer verify heating and cooling loads to verify actual building cooling requirements.

Parameters:

WATER COOLED CHILLER PARAMETERS	
INPUT	
Full Load Cooling Hrs.	800
Average Cost of Electricity	Elec Cost (\$/kWh)
Total Net Cooling Load	300
Existing Unit Eff. (Ave)	9 EER (1.33 kW/Ton)
New Unit Eff.*	0.52 kW/Ton

**New unit efficiency includes ancillary equipment energy*

Energy Savings Calculations:Cooling Energy:

$$\text{Cooling Energy} = \text{Cooling (Tons)} \times \text{Eff.} \left(\frac{\text{kW}}{\text{Ton}} \right) \times \text{Full Load Hrs.}$$

$$\text{Demand Savings} = \frac{\text{Energy Savings (kWh)}}{\text{Full Load Hrs}}$$

$$\text{Water Usage} = \text{Make-up water} \left(\frac{\text{gal}}{\text{Ton Hr}} \right) \times \text{Cooling Capacity (Tons)} \times \text{Full Load Hrs}$$

$$\text{Water Cost} = \text{water consumption (gal)} \times \text{Ave Water Cost} \left(\frac{\$}{\text{Gal}} \right)$$

$$\text{Elec Savings} = \text{Elec Energy (kWh)} \times \text{Ave Elec Cost} \left(\frac{\$}{\text{kWh}} \right)$$

Energy savings calculations are summarized in the table below.

WATER COOLED CHILLER CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Existing Air Cooled Chillers	Water Cooled Chiller & Cooling Tower	-
Operating Capacity (Tons)	300	300	-
Total System Efficiency (KW/Ton)	1.33	0.52	-
Full Load Cooling Hrs (Est.)	800	800	-
Make-Up Water Use (Gal/Ton Hr)	0	2.5	-
Cooling Energy (kWh)	320,000	124,800	-
Water Cost (\$/Gallon)	0.0025	0.0025	-
Elec Cost (\$/kWh)	0.165	0.165	-
ANNUAL ENERGY AND COST SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Water Usage (Gallons)	0.0	600,000	(600,000)
Electric Energy (kWh)	320,000	124,800	195,200
Electric Demand (KW)	400.0	156	244
Water Cost (\$)	\$0	1,500	(1,500)
Electric Energy Cost (\$)	\$52,800	\$20,592	\$32,208
Total Cost (\$)	\$52,800	\$22,092	\$30,708
COMMENTS:	New chiller efficiency based on water cooled, centrifugal, magnetic bearing chillers Electricity Cost Estimated.		

Installation cost and Equipment Incentives

Installation cost for the pre-built, packaged water cooled chiller systems with chilled water and condenser water pumps, piping, cooling tower and controls is estimated to be \$900,000.

From the NJ Smart Start® Program appendix, the unit falls under the category “Electric Chiller” and warrants an incentive based on part load efficiency (EER) at 0.38 KW/Ton. The program incentives are calculated as follows:

$$\begin{aligned}\text{Smart Start}^{\circledR} \text{ Incentive} &= (\text{Cooling Tons} \times \$/\text{Ton Incentive}) \\ &= 2 \times (150 \text{ Tons} \times \$53/\text{Ton}) = \$15,900\end{aligned}$$

Energy Savings Summary:

ECM #9 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$900,000
NJ Smart Start Equipment Incentive (\$):	\$15,900
Net Installation Cost (\$):	\$884,100
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$30,708
Total Yearly Savings (\$/Yr):	\$30,708
Estimated ECM Lifetime (Yr):	15
Simple Payback	28.8
Simple Lifetime ROI	-47.9%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$460,620
Internal Rate of Return (IRR)	-7%
Net Present Value (NPV)	(\$517,509.89)

ECM #10: Install Thermostatic Control Valves for Radiators

Description:

Space heating is provided with cast iron steam radiators throughout the spaces in this facility. These radiators have manual shut off valves, most of which have deteriorated and therefore inoperable. Individual radiator controls is crucial in this facility since there is one heating zone for each building/structure of the entire facility.

Manual shut off valves on older radiators cause energy waste. Because, manual valves require continual adjustment as conditions change. In addition, manual valves are usually unstable hence harder to operate at low outputs. Therefore, occupants tend to leave the valves at a certain position (usually fully open position) and open windows instead of adjusting the valve.

In addition to inefficiencies due to the nature of the manual valves, most of the valves in this building are inaccessible or inoperable due to age and sediment buildup. Inoperable manual shut off valves and the lack of smaller heating zones in this building causes temperature control issues. It is reported that parts of the building overheat and people tend to open window in regain comfort conditions.

These problems can be partially solved by installing thermostatic valves in place of the manual valves. The thermostatic valves follow the fluctuations in space load and radiator output, keeping space temperature stable.

CEG recommends replacing the manual shut off valves with thermostatic valves on the radiators throughout the building, starting with the problematic areas. Thermostatic control valves provide temperature controls within the spaces by modulating the flow through the valve with respect to surrounding temperature. These valves typically have a self contained thermostatic element. Occupants should be trained and encouraged to actively adjust the valves to achieve comfortable temperature settings.

This energy conservation measure includes installation of thermostatic radiator control on each radiator or convector throughout the building. The basis for this ECM is based on Danfoss self contained TRV.

Energy Savings Calculations:

Energy savings calculations are derived from the actual natural gas consumption of the building, number of heating degree days at this location and estimated overheating temperature.

First, total design day heat load of the building is back-calculated using the actual natural gas consumption of the building, HDDs based on 70°F (5°F overheat) and 24hours per day operation.

$$\text{Total Heat Load, } \frac{\text{BTU}}{\text{hr}} = \frac{\text{Heating Energy Used (Therms)} \times \Delta T \times \text{Eff} \times V}{\text{HDD}_{67^{\circ}\text{F}} \times \text{Hours of Operation}}$$

Then the proposed energy consumption of the building is re-calculated using the total heat load of the building and HDDs at 65°F.

$$\text{Heating Energy Used (Therms)} = \frac{\text{Heating Capacity} \times \text{HDD}_{65^{\circ}\text{F}} \times \text{Hours of Operation}}{\Delta T \times \text{Eff} \times V}$$

Where:

HDD = number of Heating Degree Days as Specified Base Temperature

ΔT = Design temperature difference, 70°F

Eff = Efficiency of Energy Utilization (Boiler efficiency)

V = Heating value of fuel, BTU/Therm (100,000 Btu/Hr per Therm)

Estimated total cost of heating = Energy Consumption (Therms) x Cost of Natural Gas (\$/Therms)

Energy savings calculations are summarized in the table below.

THERMOSTATIC RADIATOR CONTROLS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Existing Controls	Space Temperature Sensors	
Overheat by: (°F)	5	0	
Annual Natural Gas Cons. (Therms)	99,746	-	-
Heating Degree Days (70°F)	5,995	-	-
Heating Degree Days (65°F)	-	4,808	-
Design Day Temperature Diff. (°F)	70	70	-
Heating Efficiency (Natural Gas Boiler)	70%	70%	-
Design Day Heating Capacity, BTU/Hr	3,396,966	3,396,966	-
Natural Gas Cost (\$/Therm)	\$1.000	\$1.000	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Natural Gas Cons.	99,746	79,996	19,750
Total Energy Cost (\$)	\$99,746	\$79,996	\$19,750
COMMENTS:	HDDs estimated based on Newark,NJ.		

Cost

Estimated installed cost of thermostatic radiator valve for each radiator is \$500.
Estimated number of radiators and convectors suitable is 350.

Total installed cost of this ECM is \$175,500

Energy Savings Summary:

ECM #10 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$175,000
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$175,000
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$19,750
Total Yearly Savings (\$/Yr):	\$19,750
Estimated ECM Lifetime (Yr):	15
Simple Payback	8.9
Simple Lifetime ROI	69.3%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$296,243
Internal Rate of Return (IRR)	7%
Net Present Value (NPV)	\$60,768.75

ECM #11: Boiler Controls Upgrade - Space Sensors

Description:

The space heating for the Bergen County Justice Center is provided from the attached central boiler plant. The boiler plant houses multiple steam boilers. The boilers are controlled via three Heat-Timer Platinum Series boiler controller/sequencer. The boiler controller is capable of various energy saving features such as space temperature compensation, night set back and temperature reset based on outside air. Currently the system throughput is controlled based on outside air only due to malfunctioning space temperatures. Although a common practice, modulation of the heat based on outside air only often causes over-heating of the spaces due to lack of compensation based on actual space temperatures. Heating energy consumption of the facility can be reduced by installing space temperatures for each boiler controller.

This energy conservation measure will install space temperature sensors to each boiler controller to control the hot baseboard heating system based on indoor temperature as well as the ambient temperature. Based on discussions with the facility personnel, estimated temperature the spaces overheat by is 2°F.

Energy Savings Calculations:

Energy savings calculations are derived from the actual natural gas consumption of the building, number of heating degree days at this location and estimated overheating temperature.

First, total design day heat load of the building is back-calculated using the actual natural gas consumption of the building, HDDs based on 67°F (2°F overheat) and 24hours per day operation.

$$\text{Total Heat Load, } \frac{\text{BTU}}{\text{hr}} = \frac{\text{Heating Energy Used (Therms)} \times \Delta T \times \text{Eff} \times V}{\text{HDD}_{67^\circ\text{F}} \times \text{Hours of Operation}}$$

Then the proposed energy consumption of the building is re-calculated using the total heat load of the building and HDDs at 65°F.

$$\text{Heating Energy Used (Therms)} = \frac{\text{Heating Capacity} \times \text{HDD}_{65^\circ\text{F}} \times \text{Hours of Operation}}{\Delta T \times \text{Eff} \times V}$$

Where:

HDD = number of Heating Degree Days as Specified Base Temperature

ΔT= Design temperature difference, 70°F

Eff = Efficiency of Energy Utilization (Boiler efficiency)

V = Heating value of fuel, BTU/Therm (100,000 Btu/Hr per Therm)

Estimated total cost of heating = Energy Consumption (Therms) x Cost of Natural Gas (\$/Therms)

Energy savings calculations are summarized in the table below.

BOILER CONTROLS UPGRADE - SPACE SENSORS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Existing Controls	Space Temperature Sensors	
Overheat by: (°F)	2	0	
Annual Natural Gas Cons. (Therms)	99,746	-	-
Heating Degree Days (67°F)	5,264	-	-
Heating Degree Days (65°F)	-	4,808	-
Design Day Temperature Diff. (°F)	70	70	-
Heating Efficiency (Natural Gas Boiler)	70%	70%	-
Design Day Heating Capacity, BTU/Hr	3,868,695	3,868,695	-
Elec Cost (\$/kWh)	\$0.000	\$0.000	-
Natural Gas Cost (\$/Therm)	\$1.000	\$1.000	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Natural Gas Cons.	99,746	91,105	8,641
Total Energy Cost (\$)	\$99,746	\$91,105	\$8,641
COMMENTS:	HDDs estimated based on Newark,NJ.		

Cost

Total estimated installed cost for six space temperature sensors (two sensors for each controller) to be connected to each boiler controllers is \$15,000.

Energy Savings Summary:

ECM #11 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$15,000
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$15,000
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$8,641
Total Yearly Savings (\$/Yr):	\$8,641
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.7
Simple Lifetime ROI	764.1%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$129,609
Internal Rate of Return (IRR)	58%
Net Present Value (NPV)	\$88,151.05

REM #1: 728 kW Solar Photovoltaic System over Parking Lots

Description:

The Bergen County Justice Center Building has approximately 51,700 square-foot of available parking lot space that can accommodate a 728.6 kilowatt canopy mounted solar photovoltaic system.

The array will produce approximately 890,147 kilowatt-hours annually, which will reduce the overall electric usage of the facility by 16.5%.

Energy Savings Calculations:

See **Renewable / Distributed Energy Measures Calculations Appendix** for detailed financial summary and proposed solar layout areas.

Energy Savings Summary:

REM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$6,557,760
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$6,557,760
Maintenance Savings (\$/Yr):	\$311,551
Energy Savings (\$/Yr):	\$133,522
Total Yearly Savings (\$/Yr):	\$445,074
Estimated ECM Lifetime (Yr):	15
Simple Payback	14.7
Simple Lifetime ROI	1.8%
Simple Lifetime Maintenance Savings	\$4,673,272
Simple Lifetime Savings	\$6,676,103
Internal Rate of Return (IRR)	0%
Net Present Value (NPV)	(\$1,244,501.45)

V. ADDITIONAL RECOMMENDATIONS

The following recommendations include no cost/low cost measures, Operation & Maintenance (O&M) items, and water conservation measures with attractive paybacks. These measures are not eligible for the Smart Start Buildings incentives from the office of Clean Energy but save energy none the less.

- A. Chemically clean the condenser and evaporator coils periodically to optimize efficiency. Poorly maintained heat transfer surfaces can reduce efficiency 5-10%.
- B. Maintain all weather stripping on windows and doors.
- C. Clean all light fixtures to maximize light output.
- D. Provide more frequent air filter changes to decrease overall system power usage and maintain better IAQ.
- E. Turn off computers when not in use. Ensure computers are not running in screen saver mode which saves the monitor screen not energy.
- F. Ensure outside air dampers are functioning properly and only open during occupied mode.

ECM COST & SAVINGS BREAKDOWN
CONCORD ENGINEERING GROUP

Bergen County Justice Center

ECM ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
ECM NO.	DESCRIPTION	INSTALLATION COST				YEARLY SAVINGS			ECM LIFETIME	LIFETIME ENERGY SAVINGS	LIFETIME MAINTENANCE SAVINGS	LIFETIME ROI	SIMPLE PAYBACK	INTERNAL RATE OF RETURN	NET PRESENT VALUE (NPV)
		MATERIAL	LABOR	REBATES, INCENTIVES	NET INSTALLATION COST	ENERGY	MAINT. / SREC	TOTAL		(Yearly Saving * ECM Lifetime)	(Yearly Maint Saving * ECM Lifetime)	(Lifetime Savings - Net Cost) / (Net Cost)	(Net cost / Yearly Savings)	$\sum_{n=0}^N \frac{C_n}{(1 + IRR)^n}$	$\sum_{n=0}^N \frac{C_n}{(1 + DR)^n}$
		(\$)	(\$)	(\$)	(\$)	(\$/Yr)	(\$/Yr)	(\$/Yr)		(\$)	(\$)	(%)	(Yr)	(\$)	(\$)
ECM #1	Lighting Upgrade	\$24,744	\$37,116	\$2,420	\$59,440	\$25,267	\$113	\$25,379	15	\$380,687	\$1,689	540.5%	2.3	42.49%	\$243,534.35
ECM #2	Lighting Controls	\$16,433	\$38,343	\$6,100	\$48,675	\$9,099	\$0	\$9,099	15	\$136,478	\$0	180.4%	5.3	16.89%	\$59,942.71
ECM #3	Energy Star Rated Window AC Units	\$475	\$150	\$0	\$625	\$57	\$0	\$57	10	\$575	\$0	-8.0%	10.9	-1.50%	(\$134.74)
ECM #4	Valve Blanket & Pipe Insulation	\$1,570	\$3,930	\$0	\$5,500	\$1,985	\$0	\$1,985	15	\$29,771	\$0	441.3%	2.8	35.72%	\$18,193.59
ECM #5	Install Variable Frequency Drives	\$69,000	\$67,000	\$15,625	\$120,375	\$5,769	\$0	\$5,769	15	\$86,535	\$0	-28.1%	20.9	-3.87%	(\$51,504.97)
ECM #6	AC Unit Replacements	\$130,900	\$86,000	\$14,253	\$202,648	\$4,094	\$0	\$4,094	15	\$61,410	\$0	-69.7%	49.5	-12.20%	(\$153,773.60)
ECM #7	NEMA Premium Efficiency Motors	\$36,309	\$30,495	\$2,340	\$64,464	\$3,486	\$0	\$3,486	15	\$52,294	\$0	-18.9%	18.5	-2.51%	(\$22,845.37)
ECM #8	Install VRF AC System	\$312,000	\$312,000	\$22,464	\$601,536	\$36,870	\$0	\$36,870	15	\$553,054	\$0	-8.1%	16.3	-1.03%	(\$161,381.32)
ECM #9	Install Water Cooled Chillers	\$900,000	\$0	\$15,900	\$884,100	\$30,708	\$0	\$30,708	15	\$460,620	\$0	-47.9%	28.8	-7.23%	(\$517,509.89)
ECM #10	Thermostatic Steam Control Valves	\$175,000	\$0	\$0	\$175,000	\$19,750	\$0	\$19,750	15	\$296,243	\$0	69.3%	8.9	7.44%	\$60,768.75
ECM #11	Boiler Controls Upgrade - Space Temperature Sensors	\$15,000	\$0	\$0	\$15,000	\$8,641	\$0	\$8,641	15	\$129,609	\$0	764.1%	1.7	57.54%	\$88,151.05
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	Solar Photovoltaic System	\$6,557,760	\$0	\$0	\$6,557,760	\$133,522	\$311,551	\$445,074	15	\$6,676,103	\$4,673,272	1.8%	14.7	0.22%	(\$1,244,501.45)

Notes: 1) The variable Cn in the formulas for Internal Rate of Return and Net Present Value stands for the cash flow during each period.
2) The variable DR in the NPV equation stands for Discount Rate
3) For NPV and IRR calculations: From n=0 to N periods where N is the *lifetime of ECM* and Cn is the *cash flow during each period*.



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SmartStart Building Incentives

The NJ SmartStart Buildings Program offers financial incentives on a wide variety of building system equipment. The incentives were developed to help offset the initial cost of energy-efficient equipment. The following tables show the current available incentives as of February, 2010:

Electric Chillers

Water-Cooled Chillers	\$12 - \$170 per ton
Air-Cooled Chillers	\$8 - \$52 per ton

Energy Efficiency must comply with ASHRAE 90.1-2004

Gas Cooling

Gas Absorption Chillers	\$185 - \$400 per ton
Gas Engine-Driven Chillers	Calculated through custom measure path)

Desiccant Systems

\$1.00 per cfm – gas or electric

Electric Unitary HVAC

Unitary AC and Split Systems	\$73 - \$93 per ton
Air-to-Air Heat Pumps	\$73 - \$92 per ton
Water-Source Heat Pumps	\$81 per ton
Packaged Terminal AC & HP	\$65 per ton
Central DX AC Systems	\$40- \$72 per ton
Dual Enthalpy Economizer Controls	\$250
Occupancy Controlled Thermostat (Hospitality & Institutional Facility)	\$75 per thermostat

Energy Efficiency must comply with ASHRAE 90.1-2004

Ground Source Heat Pumps

Closed Loop & Open Loop	\$450 per ton, EER \geq 16 \$600 per ton, EER \geq 18 \$750 per ton, EER \geq 20
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Energy Efficiency must comply with ASHRAE 90.1-2004

Gas Heating

Gas Fired Boilers < 300 MBH	\$300 per unit
Gas Fired Boilers \geq 300 - 1500 MBH	\$1.75 per MBH
Gas Fired Boilers \geq 1500 - \leq 4000 MBH	\$1.00 per MBH
Gas Fired Boilers > 4000 MBH	(Calculated through Custom Measure Path)
Gas Furnaces	\$300 - \$400 per unit, AFUE \geq 92%

Variable Frequency Drives

Variable Air Volume	\$65 - \$155 per hp
Chilled-Water Pumps	\$60 per hp
Compressors	\$5,250 to \$12,500 per drive

Natural Gas Water Heating

Gas Water Heaters \leq 50 gallons	\$50 per unit
Gas-Fired Water Heaters > 50 gallons	\$1.00 - \$2.00 per MBH
Gas-Fired Booster Water Heaters	\$17 - \$35 per MBH
Gas Fired Tankless Water Heaters	\$300 per unit

Prescriptive Lighting

Retro fit of T12 to T-5 or T-8 Lamps w/Electronic Ballast in Existing Facilities	\$10 per fixture (1-4 lamps)
Replacement of T12 with new T-5 or T-8 Lamps w/Electronic Ballast in Existing Facilities	\$25 per fixture (1-2 lamps) \$30 per fixture (3-4 lamps)
Replacement of incandescent with screw-in PAR 38 or PAR 30 (CFL) bulb	\$7 per bulb
T-8 reduced Wattage (28w/25w 4', 1-4 lamps) Lamp & ballast replacement	\$10 per fixture
Hard-Wired Compact Fluorescent	\$25 - \$30 per fixture
Metal Halide w/Pulse Start	\$25 per fixture
LED Exit Signs	\$10 - \$20 per fixture
T-5 and T-8 High Bay Fixtures	\$16 - \$284 per fixture
HID \geq 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	\$50 per fixture
HID \geq 100w Replacement with new HID \geq 100w	\$70 per fixture
LED Refrigerator/Freezer case lighting replacement of fluorescent in medium and low temperature display case	\$42 per 5 foot \$65 per 6 foot

Lighting Controls – Occupancy Sensors

Wall Mounted	\$20 per control
Remote Mounted	\$35 per control
Daylight Dimmers	\$25 per fixture
Occupancy Controlled hi-low Fluorescent Controls	\$25 per fixture controlled

Lighting Controls – HID or Fluorescent Hi-Bay Controls

Occupancy hi-low	\$75 per fixture controlled
Daylight Dimming	\$75 per fixture controlled
Daylight Dimming - office	\$50 per fixture controlled

Premium Motors

Three-Phase Motors	\$45 - \$700 per motor
Fractional HP Motors Electronic Communicated Motors (replacing shaded pole motors in refrigerator/freezer cases)	\$40 per electronic communicated motor

Other Equipment Incentives

Performance Lighting	\$1.00 per watt per SF below program incentive threshold, currently 5% more energy efficient than ASHRAE 90.1- 2004 for New Construction and Complete Renovation
Custom Electric and Gas Equipment Incentives	not prescriptive
Custom Measures	\$0.16 KWh and \$1.60/Therm of 1st year savings, or a buy down to a 1 year payback on estimated savings. Minimum required savings of 75,000 KWh or 1,500 Therms and a IRR of at least 10%.
Multi Measures Bonus	15%

STATEMENT OF ENERGY PERFORMANCE

Justice Center

Not able to generate report due to incomplete utility data.

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Pumps

Tag	P 1,2,3	P 4,5,6	CWP
Unit Type	Base mounted Chilled Water Pumps	Base mounted Condenser Pumps	Base mounted on the air cooled chiller
Qty	3	3	4 (2 per chiller)
Location	Fan room	Fan room	Roof
Area Served	Chilled Water Loop	Chiller Condenser Water Loop	Chilled Water Loop
Manufacturer	Bell Gossett	Bell Gossett	-
Model #	2.5BB 8.625 BF	-	-
Serial #	2034202 179	-	-
Flow	300 GPM @60 ft	-	-
Horse Power, HP	7.50	10	20
Motor Efficiency %	84%	Standard	88.5%
Motor Info	Marathon Electric	Century Electric	Baldor
Electrical Power	208/3 phase	208/3 phase	208/3 phase
RPM	1745	1750	3525
Approx Age	10	10	10
ASHRAE Service Life	20	20	20
Remaining Life	10	10	10
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Pumps

Tag	P		
Unit Type	Pipe mounted DHW Circulator		
Qty	1		
Location	Boiler room		
Area Served	Domestic HW Loop		
Manufacturer	BG		
Model #	-		
Serial #	-		
Flow	-		
Horse Power, HP	1/3		
Motor Efficiency %	-		
Motor Info	-		
Electrical Power	110 single p		
RPM	1725		
Approx Age	5		
ASHRAE Service Life	10		
Remaining Life	5		
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Fans

Tag	Fan #4	Fan #3	Fan #2
Unit Type	Return fan	Return fan	Return fan
Qty	1	1	1
Location	Penthouse #2	Penthouse #2	Penthouse #2
Area Served	AHU	AHU #3	AHU #2
Manufacturer	Westinghouse	Westinghouse	Westinghouse
Model #	Size: 3037 Style: NAY-6464-4	-	-
Serial #	60-A-6260-GR38	-	-
Horse Power, HP	10	2	2
Motor Efficiency %	89.5%	-	-
Approx Age	20	20	20
ASHRAE Service Life	25	12	12
Remaining Life	5	(8)	(8)
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Fans

Tag	Toilet Supply Fan	Toilet Fans	Exhaust Fans
Unit Type	Centrifugal	Centrifugal	Mushroom
Qty	1	1	10 (Est)
Location	Penthouse #2	Penthouse #2	Roof
Area Served	Toilets	Toilets	Various
Manufacturer	Westinghouse	-	-
Model #	-	-	-
Serial #	-	-	-
Horse Power, HP	7.5	Fractional	Fractional
Motor Efficiency %	Standard	-	-
Approx Age	20	20	20
ASHRAE Service Life	25	20	20
Remaining Life	5	0	0
Comments	Operates 24/7		

MAJOR EQUIPMENT LIST

Concord Engineering Group Bergen County Justice Center

Rooftop AC Units

Tag	AC-1 & 2	RTU	AHU
Unit Type	Packaged Rooftop AC Unit	Packaged Rooftop AC Unit	Rooftop AHU
Qty	2	2	1
Location	Roof	Old BCI Area	Top of boiler room
Area Served	Rooms 425, 427	Old BCI Area	Top of boiler room
Manufacturer	Mammoth	Carrier	McQuay
Model #	CBEHFP-302-S590-58	-	RDS8000LY
Serial #	#1: 22307-01-01 #2 -22307-01-02	-	FB0U05070097000
Cooling Type	DX	DX	Chilled Water
Cooling Capacity (Tons)	58 (Est)	10 Ton	-
Cooling Efficiency (SEER/EER)	1.2 kW/Ton	10 SEER	-
Heating Type	Steam	-	Steam
Heating Input (MBH)	59000%	-	-
Efficiency	-	-	-
Electric Power	208 / 3-phase	208 / 3-phase	208 / 3-phase
Suply Fan HP	15	-	10 HP / Standard
Motor Efficiency, %	88%	-	
Exhaust Fan HP	5	-	5 HP / Standard
Motor Efficiency, %	Standard		
Approx Age	21	15	5
ASHRAE Service Life	15	15	15
Remaining Life	(6)	0	10
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group
Bergen County Justice Center

Rooftop AC Units

Tag	AHU		
Unit Type	Rooftop AHU		
Qty	2		
Location	West roof on Main St.		
Area Served	Offices below		
Manufacturer	TRANE		
Model #	TSCA030GAD		
Serial #	K02L75144		
Cooling Type	Chilled Water		
Cooling Capacity (Tons)	-		
Cooling Efficiency (SEER/EER)	-		
Heating Type	Steam		
Heating Input (MBH)	-		
Efficiency	-		
Electric Power	208 /3		
Suply Fan HP	20 15		
Motor Efficiency, %	91% 91%		
Exhaust Fan HP	-		
Motor Efficiency, %	-		
Approx Age	16		
ASHRAE Service Life	15		
Remaining Life	(1)		
Comments	Supply fan on VFD		

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Split AC Units

Tag	CU	CU	CU
Unit Type	Split AC Unit	Split AC Unit	Split AC Unit
Qty	1	1	1
Location	Roof South	Roof near Cooling Towers	Roof near Cooling Towers
Area Served	NA	NA	NA
Manufacturer	Bryant	Bryant	Bryant
Condensing Unit Model / Serial #	561CP060-E -	113RPA036-C 1507E41985	561CP060-E 0895E12847
Air Handler Model / Serial #	-	-	-
Cooling Capacity (Tons)	5	3	5
Cooling Efficiency (SEER/EER)	10	10	10
Heating Type	-	-	-
Heating Input (MBH)	-	-	-
Efficiency	-	-	-
Approx Age	13	4	16
ASHRAE Service Life	15	15	15
Remaining Life	2	11	(1)
Comments	R22 Units	R22 Units	R22 Units

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Split AC Units

Tag	CU	CU	CU
Unit Type	Split AC Unit	Ductless Split AC Unit	Ductless Split AC
Qty	1	1	2
Location	Roof	South Side Ground	South Side Ground
Area Served	Penthouse storage area	Computer Room	Computer Room
Manufacturer	TRANE	EMI	Mitsubishi
Condensing Unit Model / Serial #	TWA060A300A1	MC4D222AAA000F / 1-01-L-5469-48	NUM30NN2 / 06900590D, 16900042A
Air Handler Model / Serial #	-	-	(2) MS09NW + MS15NN / -
Cooling Capacity (Tons)	5	22 MBH	30 MBH
Cooling Efficiency (SEER/EER)	10 SEER	10 SEER	10 SEER
Heating Type	Heat pump	Heat Pump	-
Heating Input (MBH)	60	20.8 MBH	-
Efficiency	COP 3.5 High Temp 2.5 Low Temp	COP: 3	-
Approx Age	22	10	5
ASHRAE Service Life	15	15	15
Remaining Life	(7)	5	10
Comments	R22 Units	R22 Units	R22 Units

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Split AC Units

Tag	CU	CU	CU
Unit Type	Split AC	Ductless Split AC	Ductless Split AC
Qty	1	2	1
Location	South Side Ground	North Side Ground	North Side Ground
Area Served	Mail room	Transportation Group	Transportation Group
Manufacturer	Carrier	Sanyo	Mitsubishi
Condensing Unit Model / Serial #	38AKS014---521--	CM3212 / 0027251, 0023651	C3672R / 0073294
Air Handler Model / Serial #	2207G20092	-	-
Cooling Capacity (Tons)	12.5	32 MBH	36 MBH
Cooling Efficiency (SEER/EER)	~12 SEER	10 SEER	13 SEER
Heating Type	-	-	-
Heating Input (MBH)	-	-	-
Efficiency	-	-	-
Approx Age	4	6	3
ASHRAE Service Life	15	15	15
Remaining Life	11	9	12
Comments	R22		

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Split AC Units

Tag	CU	CU	CU
Unit Type	Split AC Unit	Split AC Unit	Ductless Split AC
Qty	1	1	1
Location	Top of Glass Atrium	Top of Glass Atrium	Old BCI Area
Area Served	Courtroom 260	Courtroom 260	Old BCI Area
Manufacturer	Carrier	Carrier	Mitsubishi
Condensing Unit Model / Serial #	38AKS013 / 1596F00276	38AKS016 / 1696F01600	-
Air Handler Model / Serial #	-	-	-
Cooling Capacity (Tons)	10	15.0	3 Ton
Cooling Efficiency (SEER/EER)	9.4 EER	9.1 EER	13 SEER
Heating Type	-	-	-
Heating Input (MBH)	-	-	-
Efficiency	-	-	-
Approx Age	15	15	5
ASHRAE Service Life	15	15	15
Remaining Life	0	0	10
Comments	Unit's are controlled via mechanical thermostats and mechanical time clocks		

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Split AC Units

Tag	CU	CU	CU
Unit Type	Ductless Split AC	Split AC Unit	Split AC Unit
Qty	1	1	1
Location	Old BCI Area	West roof on Main St.	West roof on Main St.
Area Served	Old BCI Area	Room 116	Attorney Room
Manufacturer	Sanyo	Bryant	Carrier
Condensing Unit Model / Serial #	-	569CPX090000AAAA / 2198G00256	CA1024VKA1
Air Handler Model / Serial #	-	-	-
Cooling Capacity (Tons)	32 MBH	7.5	2
Cooling Efficiency (SEER/EER)	10 SEER	10 SEER	9 SEER
Heating Type	-	-	-
Heating Input (MBH)	-	-	-
Efficiency	-	-	-
Approx Age	15	13	20
ASHRAE Service Life	15	15	15
Remaining Life	0	2	(5)
Comments		AHU older than CU	

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Split AC Units

Tag	CU		
Unit Type	Split AC Unit		
Qty	1		
Location	Cafeteria		
Area Served	Cafeteria		
Manufacturer	Rheem		
Condensing Unit Model / Serial #	RANL-060CAZ / 7394W370900010		
Air Handler Model / Serial #	-		
Cooling Capacity (Tons)	5		
Cooling Efficiency (SEER/EER)	13		
Heating Type	-		
Heating Input (MBH)	-		
Efficiency	-		
Approx Age	2		
ASHRAE Service Life	15		
Remaining Life	13		
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Air Handling Units

Tag	AHU-8	AHU-7	AHU-5
Unit Type	Custom Built	Custom Built	Custom Built
Qty	1	1	1
Location	Main Fan Room	Main Fan Room	Main Fan Room
Area Served	Room 310	Room 412	-
Manufacturer	Westinghouse	Westinghouse	Westinghouse
Model & Serial #	-	-	-
Fan HP	3 HP Supply Fan	5 HP Supply Fan	5 HP Supply Fan
Cooling Type	Chilled water	Chilled water	Chilled water
Cooling Capacity (Tons)	-	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	Steam	Steam	Steam
Heating Input (MBH)	-	-	-
Approx Age	20	20	20
ASHRAE Service Life	15	15	15
Remaining Life	(5)	(5)	(5)
Comments	2 way control valves ~2 HP Return Fan	Standard efficiency motor 2 way control valves ~2 HP Return Fan	Fresh air intake is plenum is disintegrating. Standard efficiency motor. 2 way control valves ~2 HP Return Fan

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Air Handling Units

Tag	AHU-2	AHU-3	AHU 215
Unit Type	Custom Built	Custom Built	Packaged AHU
Qty	1	1	1
Location	Penthouse #2	Penthouse #2	Penthouse #2
Area Served	Rooms 303, 307	Rooms 403, 407	Room 215 (Prosecutor's Room)
Manufacturer	-	-	McQuay
Model & Serial #	-	-	CAH019GDAM / FBOU050700908
Fan HP	7.5	5	15 (Est)
Cooling Type	Chilled Water	Chilled Water	Chilled Water
Cooling Capacity (Tons)	-	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	Steam	Steam	Steam
Heating Input (MBH)	-	-	-
Approx Age	20	20	5
ASHRAE Service Life	15	15	15
Remaining Life	(5)	(5)	10
Comments	Standard efficiency motor	Standard efficiency motor	This is a VAV system with a VFD on supply fan. Unit is excellent condition.

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Air Handling Units

Tag	AHU #1	AHU #1	AHU #2
Unit Type	Custom Built	Packaged AHU	Packaged AHU
Qty	1	1	1
Location	Penthouse #1	3rd floor MER	3rd floor MER
Area Served	Room #355	Room 316 - 336	Room 320 - 338
Manufacturer	Westinghouse	York	Trane
Model & Serial #	-	XTI-042X045- FAGA017A / CFTM XT312	LPCAC10D1C0FL
Fan HP	3	3	3
Cooling Type	Chilled Water	Chilled Water	Chilled Water
Cooling Capacity (Tons)	-	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	Steam	-	-
Heating Input (MBH)	-	-	-
Approx Age	20	5	5
ASHRAE Service Life	15	15	15
Remaining Life	(5)	10	10
Comments		VAV system Supply fan VFD	

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Boilers

Tag	Boiler-1	Boiler-2	Boiler-3
Unit Type	Gas fired, cast iron steam boiler	Gas fired, cast iron steam boiler	Gas fired, cast iron steam boiler
Qty	1	1	1
Location	Boiler room	Boiler room	Boiler room
Area Served	Entire facility radiators and air handling units	Entire facility radiators and air handling units	Entire facility radiators and air handling units
Manufacturer	HB Smith	HB Smith	HB Smith
Model #	#650 - 25	#15 Sections	#6500-18
Serial #	-	-	-
Input Capacity (MBH)	17,100	8,715	11,543
I-B-R Rated Output Capacity (MBH)	10,481	5,435	7,165
I-B-R Efficiency %	61%	62%	62%
Fuel	Natural Gas	Natural Gas	Natural Gas
Burner Make / Model / Serial	Industrial Combustion / DMG-175S / 31138-1	Industrial Combustion / DMG-105S / 31137-1	Industrial Combustion / LNDLG-145P / 45729-1
Approx Age	21	21	4
ASHRAE Service Life	30	30	30
Remaining Life	9	9	26
Comments	Heat Timer controls for boiler sequencing not used to full capacity due to inaccurate sensors		

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Chiller

Tag	CH	CH	
Unit Type	Modular Water Cooled Chiller	Air cooled Chillers	
Qty	1	2	
Location	Fan Room	Roof	
Area Served	AHUs and RTUs	AHUs and RTUs	
Manufacturer	Multistack	Technical Systems	
Model #	MS30	30AOSM160-SPFC	
Serial #	-	12-01-61623-001-001 12-01-61623-002-001	
Refrigerant	R22	R22	
Cooling Capacity (Tons)	120	160	
Cooling Efficiency (KW/Ton)	15 EER	10 EER	
Volts / Phase / Hz	208 / 3 Phase	208 / 3 Phase	
Chilled Water GPM / ΔT	600 GPM / 10°F	Est 380 GPM / 10°F	
Condenser Water GPM / ΔT	750 GPM / 10°F	Est 500 GPM / 10°F	
Approx Age	5	10	
ASHRAE Service Life	23	20	
Remaining Life	18	10	
Comments	4 modules, 8 scroll compressors	4 x 30 kW Hitachi compressors	

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Cooling Tower

Tag	CT		
Unit Type	Induced draft		
Qty	2		
Location	Roof		
Area Served	Chillers		
Manufacturer	Marley		
Model #	-		
Serial #	A95702L 2679		
Rated Flow GPM	-		
EWI / LWT	-		
Motor HP	7.5		
Motor Efficiency	84%		
Electrical	-		
Chilled Water GPM / ΔT	-		
Condenser Water GPM / ΔT	-		
Approx Age	10		
ASHRAE Service Life	20		
Remaining Life	10		
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Domestic Water Heaters

Tag	-	-	
Unit Type	Split boiler / tank	Point of use electric heaters	
Qty	1	N/A	
Location	Boiler room	Under sink in some of the bathrooms	
Area Served	Old admin building & New wing	Old courthouse	
Manufacturer	AO Smith	-	
Boiler Model #	HW-420- 100	-	
Serial #	C 05 07159	-	
Input Capacity (MBH/KW)	420 MBH	-	
Recovery (Gal/Hr)	-	-	
Tank Size (Gallons)	200 Gal (Est)	-	
Efficiency %	80%	-	
Fuel	Natural Gas	-	
Approx Age	5	Various	
ASHRAE Service Life	12	12	
Remaining Life	7	-	
Comments	1/3 HP Circulator		

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Condensate Pumps

Tag	CRU		
Unit Type	Condensate Return Pumps		
Location	Boiler room		
Area Served	Condensate System		
Manufacturer	General Electric		
Qty.	3		
Model #	-		
Serial #	-		
HP	4 pump x 1 HP		
RPM	3450		
GPM	-		
Pumping Head (Feet)	-		
Motor Frame Size	56EZ		
Volts / Phase	208 / 1		
Approx. Age	15		
ASHRAE Service Life	15		
Remaining Life	0		
Notes			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Bergen County Justice Center

Window AC Units

Tag	-		
Unit Type	Window Mount		
Qty	208		
Location	Perimeter offices		
Area Served	Perimeter offices		
Manufacturer	Various		
Condensing Unit Model / Serial #	-		
Air Handler Model / Serial #	-		
Cooling Capacity (Tons)	18,000 BTU/H (Ave)		
Cooling Efficiency (SEER/EER)	9 EER (Ave)		
Heating Type	None		
Heating Input (MBH)	-		
Efficiency	-		
Approx Age	N/A		
ASHRAE Service Life	10		
Remaining Life	-		
Comments			

Investment Grade Lighting Audit

APPENDIX E
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CEG Job #: 9C10085

Project: Justice Center

10 Main St

Hackensack, NJ

Bldg. Sq. Ft. 218,850

Justice Center

KWH COST: **\$0.132**
(Estimated)

ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
232.21	Courtroom 401	3000	40	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	3.44	10,320.0	\$1,362	40	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	2.88	8640	\$1,140.48	\$21.00	\$840.00	0.56	1680	\$221.76	3.79			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
237.21	4th Floor Lobby	6000	12	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.62	3,744	\$494	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
222.21	402 Judge's Chamber	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95			
221.25		3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42			
613.1	Mech Room	1200	3	1	Industrial Fixture, 200w A19 Lamp	200	0.60	720.0	\$95	3	2	2 Lamp, 28w T8, Elec. Ballast, Pendant Mount, No Lens	50	0.15	180	\$23.76	\$195.00	\$585.00	0.45	540	\$71.28	8.21			
613.1	Elevator Equipment Room	1200	1	1	Industrial Fixture, 200w A19 Lamp	200	0.20	240.0	\$32	1	2	2 Lamp, 28w T8, Elec. Ballast, Pendant Mount, No Lens	50	0.05	60	\$7.92	\$195.00	\$195.00	0.15	180	\$23.76	8.21			
237.22	4th Floor Corridor	6000	70	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	3.64	21,840.0	\$2,883	70	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.22	404 Juror's Room	3000	37	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	3.18	9,546.0	\$1,260	37	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	2.66	7992	\$1,054.94	\$21.00	\$777.00	0.52	1554	\$205.13	3.79			
232.22	Jury Management Office	3000	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.86	2,580.0	\$341	10	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.72	2160	\$285.12	\$21.00	\$210.00	0.14	420	\$55.44	3.79			
621	Old Jail	3000	14	1	Track Light, 100w A Lamp	100	1.40	4,200.0	\$554	14	1	(1) 26w CFL Lamp	26	0.36	1092	\$144.14	\$20.00	\$280.00	1.04	3108	\$410.26	0.68			
221.11		1200	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	297.6	\$39	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	240	\$31.68	\$14.00	\$56.00	0.05	57.6	\$7.60	7.37			
121.14		1200	14	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	1.09	1,310.4	\$173	14	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.70	840	\$110.88	\$80.00	\$1,120.00	0.39	470.4	\$62.09	18.04			
227.21	Men's Restroom 4E	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1,170.0	\$154	6	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.29	882	\$116.42	\$24.00	\$144.00	0.10	288	\$38.02	3.79			
227.21	Women's Restroom 4E	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1,170.0	\$154	6	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.29	882	\$116.42	\$24.00	\$144.00	0.10	288	\$38.02	3.79			
222.25	Courtroom 408	3000	34	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.11	6,324.0	\$835	34	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.70	5100	\$673.20	\$14.00	\$476.00	0.41	1224	\$161.57	2.95			
551		3000	4	1	Recessed Down Light, 100w A Lamp	100	0.40	1,200.0	\$158	4	1	26w CFL Lamp	26	0.10	312	\$41.18	\$20.00	\$80.00	0.30	888	\$117.22	0.68			

Investment Grade Lighting Audit

APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING													PROPOSED LIGHTING								SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback				
222.25	Courtroom 406	3000	34	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.11	6,324.0	\$835	34	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.70	5100	\$673.20	\$14.00	\$476.00	0.41	1224	\$161.57	2.95				
551		3000	4	1	Recessed Down Light, 100w A Lamp	100	0.40	1,200.0	\$158	4	1	26w CFL Lamp	26	0.10	312	\$41.18	\$20.00	\$80.00	0.30	888	\$117.22	0.68				
221.21	501 Hall	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95				
242.15	504 Judge's Chambers	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86				
221.11	502 Hall	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95				
221.11	502 Office (3)	3000	11	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.68	2,046.0	\$270	11	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.55	1650	\$217.80	\$14.00	\$154.00	0.13	396	\$52.27	2.95				
100	502 Restroom	1200	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	50.4	\$7	1	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.03	39.6	\$5.23	\$60.00	\$60.00	0.01	10.8	\$1.43	42.09				
221.11	406 Offices	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1,302.0	\$172	7	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.35	1050	\$138.60	\$14.00	\$98.00	0.08	252	\$33.26	2.95				
221.25	406 Judge's Chambers	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42				
555		3000	1	1	Recessed Down Light, 65w BR30 Lamp	65	0.07	195.0	\$26	1	1	26w CFL Flood Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.04	117	\$15.44	1.30				
221.11	Jury Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95				
221.11	405 Offices	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1,302.0	\$172	7	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.35	1050	\$138.60	\$14.00	\$98.00	0.08	252	\$33.26	2.95				
221.25	405 Judge's Chambers	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42				
221.11	405 Jury Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95				
232.22	409 Servers	3000	9	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.77	2,322.0	\$307	9	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.65	1944	\$256.61	\$21.00	\$189.00	0.13	378	\$49.90	3.79				
221.11	Stairway S3	8760	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	9,776.2	\$1,290	18	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.90	7884	\$1,040.69	\$14.00	\$252.00	0.22	1892.16	\$249.77	1.01				
221.11	410 Offices	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95				

Investment Grade Lighting Audit

APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
221.11	410 Judge's Chambers	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
3520	Restrooms	1200	2	2	Ceiling Mount White Globe, (2) 26w CFL Lamp	52	0.10	124.8	\$16	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
221.11	Jury Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
602	410 Hall	8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
221.21		3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
222.25	Courtroom 412	3000	34	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.11	6,324.0	\$835	34	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.70	5100	\$673.20	\$14.00	\$476.00	0.41	1224	\$161.57	2.95			
551		3000	4	1	Recessed Down Light, 100w A Lamp	100	0.40	1,200.0	\$158	4	1	26w CFL Lamp	26	0.10	312	\$41.18	\$20.00	\$80.00	0.30	888	\$117.22	0.68			
237.21	417 Stairway	8760	3	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.16	1,366.6	\$180	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
222.25	417 Courtroom	3000	17	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	1.05	3,162.0	\$417	17	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.85	2550	\$336.60	\$14.00	\$238.00	0.20	612	\$80.78	2.95			
242.21	417 Back Room	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963.0	\$127	3	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.29	882	\$116.42	\$28.00	\$84.00	0.03	81	\$10.69	7.86			
222.21	417 Chambers	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95			
232.21	417 Reception Area	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	258.0	\$34	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	216	\$28.51	\$21.00	\$21.00	0.01	42	\$5.54	3.79			
222.21	418 Offices	3000	9	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.56	1,674.0	\$221	9	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.45	1350	\$178.20	\$14.00	\$126.00	0.11	324	\$42.77	2.95			
221.11	415 Open Offices	3000	22	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.36	4,092.0	\$540	22	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.10	3300	\$435.60	\$14.00	\$308.00	0.26	792	\$104.54	2.95			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
221.11	415 Breakroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
221.11	427 Open Office	3000	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	4,464.0	\$589	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3600	\$475.20	\$14.00	\$336.00	0.29	864	\$114.05	2.95			
222.21		3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95			
602		8760	3	2	Incandescent Exit Sign	20	0.06	525.6	\$69	3	1	LED Exit Sign	2	0.01	52.56	\$6.94	\$65.00	\$195.00	0.05	473.04	\$62.44	3.12			

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APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING					PROPOSED LIGHTING										SAVINGS							
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.21	425 Reception	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
237.21	425 Hall	3000	18	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.94	2,808.0	\$371	18	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12
237.21	425 Back Offices	3000	8	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.42	1,248.0	\$165	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21		3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95
227.25	425 End Office	3000	4	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., White Lens	65	0.26	780.0	\$103	4	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.20	588	\$77.62	\$24.00	\$96.00	0.06	192	\$25.34	3.79
211.22	Judge's Chambers	3000	13	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, cove lighting	30	0.39	1,170.0	\$154	13	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.25	425 Side Office	3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., White Lens	65	0.13	390.0	\$51	2	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.10	294	\$38.81	\$24.00	\$48.00	0.03	96	\$12.67	3.79
612.2	Cust. Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71
227.21	Coffee/Sink Area	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79
242.15	425 Side Office	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86
237.21	425 File Storage	3000	4	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.21	624.0	\$82	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.15	Human Resources	3000	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.43	1,284.0	\$169	4	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.39	1176	\$155.23	\$28.00	\$112.00	0.04	108	\$14.26	7.86
211.22	Judge's Chambers	3000	13	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, cove lighting	30	0.39	1,170.0	\$154	13	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.15	425 Side Office	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86
221.11	Men's Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95
242.15	425 Conference Room	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86
241.11	425 Side Office	3000	1	4	1x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.10	312.0	\$41	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.15	Women's Restroom	3000	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	174.0	\$23	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING		PROPOSED LIGHTING										SAVINGS				SAVINGS						
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
242.11	425 Conference Room	3000	6	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	107	0.64	1,926.0	\$254	6	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.59	1764	\$232.85	\$28.00	\$168.00	0.05	162	\$21.38	7.86
550		3000	10	1	Recessed Down Light, 50w MV Lamp	70	0.70	2,100.0	\$277	10	1	Bypass ballast. Install socket adapter and 26w CFL Flood Lamp	26	0.26	780	\$102.96	\$30.00	\$300.00	0.44	1320	\$174.24	1.72
237.21	425 Reception	3000	7	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.36	1,092.0	\$144	7	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.21	425 Conference Room	3000	4	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.21	624.0	\$82	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
550	426 Courtroom	3000	10	1	Recessed Down Light, 50w MV Lamp	70	0.70	2,100.0	\$277	10	1	Bypass ballast. Install socket adapter and 26w CFL Flood Lamp	26	0.26	780	\$102.96	\$30.00	\$300.00	0.44	1320	\$174.24	1.72
602		8760	3	2	Incandescent Exit Sign	20	0.06	525.6	\$69	3	1	LED Exit Sign	2	0.01	52.56	\$6.94	\$65.00	\$195.00	0.05	473.04	\$62.44	3.12
222.21	423 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
222.21	423 Judge's Chambers	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95
222.21	423 Side Office	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95
612.2	Back Stairway	6000	3	1	Pendant Mnt., 100w A19 Lamp	100	0.30	1,800.0	\$238	3	1	(1) 26w CFL Lamp	26	0.08	468	\$61.78	\$20.00	\$60.00	0.22	1332	\$175.82	0.34
221.11	513 Office	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95
222.21	511 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
122.21	510 Files	3000	8	2	2x4, 2-Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.62	1,872.0	\$247	8	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$80.00	\$640.00	0.22	672	\$88.70	7.22
221.31	Mech Room	1200	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.25	297.6	\$39	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	240	\$31.68	\$14.00	\$56.00	0.05	57.6	\$7.60	7.37
222.21	422 Conference Room	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95
222.21	421 Courtroom	3000	16	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.99	2,976.0	\$393	16	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.80	2400	\$316.80	\$14.00	\$224.00	0.19	576	\$76.03	2.95
222.12	Elevator Lobby	8760	12	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	6,517.4	\$860	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	5256	\$693.79	\$14.00	\$168.00	0.14	1261.44	\$166.51	1.01
222.21	420 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
222.21	420 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
242.15	420 Judge's Chambers	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86			
237.21	420 Restroom	3000	2	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.10	312.0	\$41	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
237.21	Women's Restroom 4N	3000	3	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.16	468.0	\$62	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
650	456 Courtroom	3000	14	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.28	840.0	\$111	14	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46	2	1	LED Exit Sign	2	0.00	35.04	\$4.63	\$65.00	\$130.00	0.04	315.36	\$41.63	3.12			
221.12	456 Office	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
221.12	Men's Restroom 4N	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
222.21	354 Office	3000	5	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95			
650	353 Courtroom	3000	14	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.28	840.0	\$111	14	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46	2	1	LED Exit Sign	2	0.00	35.04	\$4.63	\$65.00	\$130.00	0.04	315.36	\$41.63	3.12			
221.11	353 Office	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95			
222.21	353 Office	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
222.21	353 Judge's Chambers	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
100	Restrooms	1200	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	50.4	\$7	1	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.03	39.6	\$5.23	\$60.00	\$60.00	0.01	10.8	\$1.43	42.09			
221.11	353 Lunchroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95			
650	359 Courtroom	3000	9	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.18	540.0	\$71	9	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
621		3000	4	1	Track Light, 100w A Lamp	100	0.40	1,200.0	\$158	4	1	(1) 26w CFL Lamp	26	0.10	312	\$41.18	\$20.00	\$80.00	0.30	888	\$117.22	0.68			
221.34	Court Clerk	3000	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	174.0	\$23	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
222.21	Secretary Office	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
626	Restrooms	1200	1	3	Strip Light, (3) 40w G40 Lamp	120	0.12	144.0	\$19	1	3	14w G40 CFL Lamp	42	0.04	50.4	\$6.65	\$60.00	\$60.00	0.08	93.6	\$12.36	4.86			
222.21	359 Conference Room	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95			
222.22	358 Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42			
650	358 Courtroom	3000	12	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.24	720.0	\$95	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46	2	1	LED Exit Sign	2	0.00	35.04	\$4.63	\$65.00	\$130.00	0.04	315.36	\$41.63	3.12			
222.22	Judge's Chambers	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870.0	\$115	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.04	120	\$15.84	4.42			
227.21	Restrooms	1200	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	78.0	\$10	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	58.8	\$7.76	\$24.00	\$24.00	0.02	19.2	\$2.53	9.47			
111.14	Flag Light	3000	1	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.05	144.0	\$19	1	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.03	75	\$9.90	\$80.00	\$80.00	0.02	69	\$9.11	8.78			
222.11	358 Jury Rooms	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95			
221.31	358 Office	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95			
612.2	Restrooms	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71			
221.31	358 Conference Room	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95			
612.2	Restrooms	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71			
222.21	354 Courtroom	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
222.21	354 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95			
612.2	Microwave Area	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68			
612.2	Restrooms	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71			
221.11	354 Office	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
222.25	305 Courtroom	3000	36	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.23	6,696.0	\$884	36	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.80	5400	\$712.80	\$14.00	\$504.00	0.43	1296	\$171.07	2.95			
221.11	305 Office	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			

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APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING						SAVINGS							
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback	
3520	Women's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 26w CFL Lamp	52	0.05	156.0	\$21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
3520	Men's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 26w CFL Lamp	52	0.05	156.0	\$21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.11	305 Office	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1,302.0	\$172	7	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.35	1050	\$138.60	\$14.00	\$98.00	0.08	252	\$33.26	2.95	
222.15	305 Judge's Chamber	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95	
221.11	301 Office	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95	
222.21	301 judge's Chambers	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95	
3520.1	301 Restroom	1200	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	144.0	\$19	1	2	13w CFL Lamps	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.09	112.8	\$14.89	1.34	
222.21	301 Courtroom	3000	10	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.62	1,860.0	\$246	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	1500	\$198.00	\$14.00	\$140.00	0.12	360	\$47.52	2.95	
221.15	314 Courtroom	3000	30	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	1.74	5,220.0	\$689	30	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46	2	1	LED Exit Sign	2	0.00	35.04	\$4.63	\$65.00	\$130.00	0.04	315.36	\$41.63	3.12	
221.15	314 Jury Room	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.23	696.0	\$92	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
612.2	Restrooms	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68	
221.15	314 Office	3000	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.35	1,044.0	\$138	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.15	314 Judge's Chambers	3000	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.35	1,044.0	\$138	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
237.22	314 hall	3000	3	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.16	468.0	\$62	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.15	315 Courtroom	3000	21	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	1.22	3,654.0	\$482	21	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46	2	1	LED Exit Sign	2	0.00	35.04	\$4.63	\$65.00	\$130.00	0.04	315.36	\$41.63	3.12	
221.15	315 Jury Room	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.23	696.0	\$92	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
242.22	316 Office	3000	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	104	0.21	624.0	\$82	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	86	0.17	516	\$68.11	\$28.00	\$56.00	0.04	108	\$14.26	3.93	

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING									PROPOSED LIGHTING					SAVINGS								
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.25	317 Courtroom	3000	20	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	1.24	3,720.0	\$491	20	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.00	3000	\$396.00	\$14.00	\$280.00	0.24	720	\$95.04	2.95
555		3000	3	1	Recessed Down Light, 65w BR30 Lamp	65	0.20	585.0	\$77	3	1	26w CFL Flood Lamp	26	0.08	234	\$30.89	\$20.00	\$60.00	0.12	351	\$46.33	1.30
222.22	310 Office	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.05	144	\$19.01	4.42
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390.0	\$51	2	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.10	294	\$38.81	\$24.00	\$48.00	0.03	96	\$12.67	3.79
222.21	310 Judge's Chambers	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
222.21	310 Jury Room	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
222.25	311 Courtroom	3000	36	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.23	6,696.0	\$884	36	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.80	5400	\$712.80	\$14.00	\$504.00	0.43	1296	\$171.07	2.95
555		3000	2	1	Recessed Down Light, 65w BR30 Lamp	65	0.13	390.0	\$51	2	1	26w CFL Flood Lamp	26	0.05	156	\$20.59	\$20.00	\$40.00	0.08	234	\$30.89	1.30
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12
100	311 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126.0	\$17	1	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.03	99	\$13.07	\$60.00	\$60.00	0.01	27	\$3.56	16.84
242.21	Municipal Division Hall	3000	6	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.64	1,926.0	\$254	6	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.59	1764	\$232.85	\$28.00	\$168.00	0.05	162	\$21.38	7.86
242.21	Conference Room	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86
242.21	Office	3000	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1,284.0	\$169	4	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.39	1176	\$155.23	\$28.00	\$112.00	0.04	108	\$14.26	7.86
242.21	Office	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963.0	\$127	3	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.29	882	\$116.42	\$28.00	\$84.00	0.03	81	\$10.69	7.86
242.21	Office	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	642.0	\$85	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	588	\$77.62	\$28.00	\$56.00	0.02	54	\$7.13	7.86
100	Restrooms (2)	3000	2	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.08	252.0	\$33	2	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.07	198	\$26.14	\$60.00	\$120.00	0.02	54	\$7.13	16.84
237.22	3rd Floor Corridors	6000	94	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	4.89	29,328.0	\$3,871	94	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	306 Courtroom	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
221.21	Bullpen	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING					SAVINGS							
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
221.11	306 Jury Room	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
3520.1	Women's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	360.0	\$48	1	2	13w CFL Lamps	26	0.03	78	\$10.30	\$20.00	\$20.00	0.09	282	\$37.22	0.54
3520.1	Men's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	360.0	\$48	1	2	13w CFL Lamps	26	0.03	78	\$10.30	\$20.00	\$20.00	0.09	282	\$37.22	0.54
221.11	306 Judge's Chambers	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
221.25		3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42
555		3000	1	1	Recessed Down Light, 65w BR30 Lamp	65	0.07	195.0	\$26	1	1	26w CFL Flood Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.04	117	\$15.44	1.30
222.21	333 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
100	333 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126.0	\$17	1	2	Reballast & Relamp: 17w T8 Elec. Ballast	33	0.03	99	\$13.07	\$60.00	\$60.00	0.01	27	\$3.56	16.84
221.21	333 hall	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
602		8760	4	2	Incandescent Exit Sign	20	0.08	700.8	\$93	4	1	LED Exit Sign	2	0.01	70.08	\$9.25	\$65.00	\$260.00	0.07	630.72	\$83.26	3.12
222.21	335 Jury Room	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12
222.21	334 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
222.21	334A Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
222.21	334 Judge's Chamber	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
222.21	335 Judge's Chamber	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
222.21	332 Courtroom	3000	20	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.24	3,720.0	\$491	20	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.00	3000	\$396.00	\$14.00	\$280.00	0.24	720	\$95.04	2.95
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12
222.21	335 Courtroom	3000	20	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.24	3,720.0	\$491	20	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.00	3000	\$396.00	\$14.00	\$280.00	0.24	720	\$95.04	2.95

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
602	330 Courtroom	8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
221.22	330 Hall	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt. In Wall, Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
232.22	330 Office	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79			
232.22	330 Judge's Chamber	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,032.0	\$136	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	864	\$114.05	\$21.00	\$84.00	0.06	168	\$22.18	3.79			
232.22	331 Courtroom	3000	16	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.38	4,128.0	\$545	16	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.15	3456	\$456.19	\$21.00	\$336.00	0.22	672	\$88.70	3.79			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
232.22	331 Jury Room	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79			
626	Restroom	3000	1	3	Strip Light, (3) 40w G40 Lamp	120	0.12	360.0	\$48	1	3	14w G40 CFL Lamp	42	0.04	126	\$16.63	\$60.00	\$60.00	0.08	234	\$30.89	1.94			
558	Lawyer's Lounge	3000	16	1	Recessed Down Light, 100w R30 Lamp	100	1.60	4,800.0	\$634	16	1	Energy Star Rated, Dimmable 26w CFL Lamp	26	0.42	1248	\$164.74	\$20.00	\$320.00	1.18	3552	\$468.86	0.68			
222.22		3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42			
222.21	327 Office	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95			
222.21	323 Office	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
232.22	323 Judges Chambers	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,032.0	\$136	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	864	\$114.05	\$21.00	\$84.00	0.06	168	\$22.18	3.79			
612.2	Restroom	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68			
612.2	Restroom	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68			
613.1	Mech Room	3000	2	1	Industrial Fixture, 200w A19 Lamp	200	0.40	1,200.0	\$158	2	2	2 Lamp, 28w T8, Elec. Ballast, Pendant Mount, No Lens	50	0.10	300	\$39.60	\$195.00	\$390.00	0.30	900	\$118.80	3.28			
221.31	320 Storage	1200	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.12	148.8	\$20	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	120	\$15.84	\$14.00	\$28.00	0.02	28.8	\$3.80	7.37			
222.41	Stair 5	8760	10	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	58	0.58	5,080.8	\$671	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	4380	\$578.16	\$14.00	\$140.00	0.08	700.8	\$92.51	1.51			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
612.2		8760	2	1	Pendant Mnt., 100w A19 Lamp	100	0.20	1,752.0	\$231	2	1	(1) 26w CFL Lamp	26	0.05	455.52	\$60.13	\$20.00	\$40.00	0.15	1296.48	\$171.14	0.23			
232.22	Cafeteria	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.03	3,096.0	\$409	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2592	\$342.14	\$21.00	\$252.00	0.17	504	\$66.53	3.79			
232.22	340 Office	3000	7	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.60	1,806.0	\$238	7	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.50	1512	\$199.58	\$21.00	\$147.00	0.10	294	\$38.81	3.79			
232.22	340 Restroom	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	258.0	\$34	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	216	\$28.51	\$21.00	\$21.00	0.01	42	\$5.54	3.79			
232.22	337 Office	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.03	3,096.0	\$409	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2592	\$342.14	\$21.00	\$252.00	0.17	504	\$66.53	3.79			
227.22	337 Judge's Chamber	3000	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
227.22	337 Judge's Chamber	3000	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
227.21	338 Courtroom	3000	20	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	1.30	3,900.0	\$515	20	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.98	2940	\$388.08	\$24.00	\$480.00	0.32	960	\$126.72	3.79			
232.22	202 Prosecutor	3000	67	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	5.76	17,286.0	\$2,282	67	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	4.82	14472	\$1,910.30	\$21.00	\$1,407.00	0.94	2814	\$371.45	3.79			
242.21	202 Restroom	3000	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	321.0	\$42	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	294	\$38.81	\$28.00	\$28.00	0.01	27	\$3.56	7.86			
242.21	202 Restroom	3000	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	321.0	\$42	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	294	\$38.81	\$28.00	\$28.00	0.01	27	\$3.56	7.86			
232.22	202 Conference Room	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79			
232.22	202 Breakroom	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774.0	\$102	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	648	\$85.54	\$21.00	\$63.00	0.04	126	\$16.63	3.79			
232.22	202 Green Room	3000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	516.0	\$68	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	432	\$57.02	\$21.00	\$42.00	0.03	84	\$11.09	3.79			
237.22	207 Hall	3000	1	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.05	156.0	\$21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.22		3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79			
232.22	207 Office	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.03	3,096.0	\$409	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2592	\$342.14	\$21.00	\$252.00	0.17	504	\$66.53	3.79			
232.22	207 Side Offices (3)	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79			
232.22	207E	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,032.0	\$136	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	864	\$114.05	\$21.00	\$84.00	0.06	168	\$22.18	3.79			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
232.21	207M Mech Room	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	206.4	\$27	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	172.8	\$22.81	\$21.00	\$42.00	0.03	33.6	\$4.44	9.47			
232.22	207V Office	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,032.0	\$136	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	864	\$114.05	\$21.00	\$84.00	0.06	168	\$22.18	3.79			
232.22	207I1 Interogation	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	206.4	\$27	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	172.8	\$22.81	\$21.00	\$42.00	0.03	33.6	\$4.44	9.47			
232.22	207I2 Interogation	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	206.4	\$27	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	172.8	\$22.81	\$21.00	\$42.00	0.03	33.6	\$4.44	9.47			
232.21	Men's Restroom	1200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	103.2	\$14	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	86.4	\$11.40	\$21.00	\$21.00	0.01	16.8	\$2.22	9.47			
232.21	Women's Restroom	1200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	103.2	\$14	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	86.4	\$11.40	\$21.00	\$21.00	0.01	16.8	\$2.22	9.47			
232.22	Press Room	3000	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	2,064.0	\$272	8	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.58	1728	\$228.10	\$21.00	\$168.00	0.11	336	\$44.35	3.79			
221.22	207 Records	3000	32	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt. In Wall, Prismatic	62	1.98	5,952.0	\$786	32	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.60	4800	\$633.60	\$14.00	\$448.00	0.38	1152	\$152.06	2.95			
232.22	207 R2 Staff	3000	30	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	2.58	7,740.0	\$1,022	30	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	2.16	6480	\$855.36	\$21.00	\$630.00	0.42	1260	\$166.32	3.79			
232.22	207 R3	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774.0	\$102	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	648	\$85.54	\$21.00	\$63.00	0.04	126	\$16.63	3.79			
232.22	207 R2 Staff	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774.0	\$102	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	648	\$85.54	\$21.00	\$63.00	0.04	126	\$16.63	3.79			
121.15	207A Office	3000	12	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.94	2,808.0	\$371	12	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.60	1800	\$237.60	\$80.00	\$960.00	0.34	1008	\$133.06	7.22			
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702.0	\$93	3	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$80.00	\$240.00	0.08	252	\$33.26	7.22			
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702.0	\$93	3	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$80.00	\$240.00	0.08	252	\$33.26	7.22			
121.15	207 Side Office	3000	2	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.16	468.0	\$62	2	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$80.00	\$160.00	0.06	168	\$22.18	7.22			
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702.0	\$93	3	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$80.00	\$240.00	0.08	252	\$33.26	7.22			
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702.0	\$93	3	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$80.00	\$240.00	0.08	252	\$33.26	7.22			
121.15	Storage	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.08	93.6	\$12	1	2	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	50	0.05	60	\$7.92	\$80.00	\$80.00	0.03	33.6	\$4.44	18.04			
232.21	Vault	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	3,096.0	\$409	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2592	\$342.14	\$21.00	\$252.00	0.17	504	\$66.53	3.79			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING												SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback					
221.12	221 Open Office	3000	20	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.24	3,720.0	\$491	20	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.00	3000	\$396.00	\$14.00	\$280.00	0.24	720	\$95.04	2.95					
232.11	Side Offices (10)	3000	20	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	5,160.0	\$681	20	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00					
242.11	Storage	1200	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	107	0.11	128.4	\$17	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	117.6	\$15.52	\$28.00	\$28.00	0.01	10.8	\$1.43	19.64					
222.11	220 Open Office	3000	26	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.61	4,836.0	\$638	26	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.30	3900	\$514.80	\$14.00	\$364.00	0.31	936	\$123.55	2.95					
222.11	Copy Room	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95					
222.11	Restroom	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95					
222.11	Women's Restroom	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95					
221.11	218 Open Offices	3000	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	4,464.0	\$589	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3600	\$475.20	\$14.00	\$336.00	0.29	864	\$114.05	2.95					
222.22	218 Side Offices (6)	3000	12	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.70	2,088.0	\$276	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1800	\$237.60	\$14.00	\$168.00	0.10	288	\$38.02	4.42					
221.11	218 Conference Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95					
227.21	201 Assist Pros Office	3000	5	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.33	975.0	\$129	5	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.25	735	\$97.02	\$24.00	\$120.00	0.08	240	\$31.68	3.79					
626	Restroom	3000	1	3	Strip Light, (3) 40w G40 Lamp	120	0.12	360.0	\$48	1	3	14w G40 CFL Lamp	42	0.04	126	\$16.63	\$60.00	\$60.00	0.08	234	\$30.89	1.94					
227.21	201 Reception	3000	11	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.72	2,145.0	\$283	11	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.54	1617	\$213.44	\$24.00	\$264.00	0.18	528	\$69.70	3.79					
612.2	Storage	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71					
232.22	204 Sheriff's Waiting Area	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,032.0	\$136	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	864	\$114.05	\$21.00	\$84.00	0.06	168	\$22.18	3.79					
222.22	204 Hall	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870.0	\$115	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.04	120	\$15.84	4.42					
232.22	204 Office	3000	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	2,064.0	\$272	8	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.58	1728	\$228.10	\$21.00	\$168.00	0.11	336	\$44.35	3.79					
232.22	204 Office	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79					
232.22	204 Office	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774.0	\$102	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	648	\$85.54	\$21.00	\$63.00	0.04	126	\$16.63	3.79					

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback	
222.22	204 Office	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870.0	\$115	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.04	120	\$15.84	4.42	
222.22	Under Sheriff	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870.0	\$115	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.04	120	\$15.84	4.42	
127.22	Under Sheriff Restroom	1200	1	2	2x2, 2 Lamp, 34w T12 U-Tube, Mag. Ballast, Recessed Mnt., Prismatic Lens	72	0.07	86.4	\$11	1	2	2x2, 2 Lamp, 14w T5, Indirect; Fixture	31	0.03	37.2	\$4.91	\$215.00	\$215.00	0.04	49.2	\$6.49	33.11	
222.22	Under Sheriff Reception	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.05	144	\$19.01	4.42	
222.22	Under Sheriff Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42	
222.22	PIC Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42	
232.22	Conference Room	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79	
612.2	Restroom	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71	
111.14	204 Hall by Mail Slots	3000	1	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.05	144.0	\$19	1	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.03	75	\$9.90	\$80.00	\$80.00	0.02	69	\$9.11	8.78	
222.22		3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348.0	\$46	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	48	\$6.34	4.42	
560	Inspector's Office	3000	9	1	Recessed Down Light, 26w CFL Lamp	26	0.23	702.0	\$93	9	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
222.22	Under Sheriff Smith	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522.0	\$69	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.02	72	\$9.50	4.42	
232.22	Office A	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	258.0	\$34	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	216	\$28.51	\$21.00	\$21.00	0.01	42	\$5.54	3.79	
232.22	Office B	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	258.0	\$34	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	216	\$28.51	\$21.00	\$21.00	0.01	42	\$5.54	3.79	
3520.1	Office B Restroom	3000	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	360.0	\$48	1	2	13w CFL Lamps	26	0.03	78	\$10.30	\$20.00	\$20.00	0.09	282	\$37.22	0.54	
222.22	261 Conference Room	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42	
612.2	Back Stairs	8760	6	1	Pendant Mnt., 100w A19 Lamp	100	0.60	5,256.0	\$694	6	1	(1) 26w CFL Lamp	26	0.16	1366.56	\$180.39	\$20.00	\$120.00	0.44	3889.44	\$513.41	0.23	
222.22	262 Court Room	3000	9	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.52	1,566.0	\$207	9	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.45	1350	\$178.20	\$14.00	\$126.00	0.07	216	\$28.51	4.42	
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46	2	1	LED Exit Sign	2	0.00	35.04	\$4.63	\$65.00	\$130.00	0.04	315.36	\$41.63	3.12	

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback	
221.211	Court Room	3000	14	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt. In Wall, Prismatic	62	0.87	2,604.0	\$344	14	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.70	2100	\$277.20	\$14.00	\$196.00	0.17	504	\$66.53	2.95	
558		3000	6	1	Recessed Down Light, 100w R30 Lamp	100	0.60	1,800.0	\$238	6	1	Energy Star Rated, Dimmable 26w CFL Lamp	26	0.16	468	\$61.78	\$20.00	\$120.00	0.44	1332	\$175.82	0.68	
221.21	Old Jury Room	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95	
232.22	Judge's Chambers	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,032.0	\$136	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	864	\$114.05	\$21.00	\$84.00	0.06	168	\$22.18	3.79	
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79	
128.34	Elevator Mech Room	4000	2	2	8' Channel, 2 Lamp, 75w T12, Mag. Ballast, Pendant Mnt., No Lens	142	0.28	1,136.0	\$150	2	4	(2) 8' Lamps to (4) 4' Lamps - FO28, T8, Elect Ballast; retrofit	98	0.20	784	\$103.49	\$100.00	\$200.00	0.09	352	\$46.46	4.30	
222.21	Files	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95	
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12	
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390.0	\$51	2	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.10	294	\$38.81	\$24.00	\$48.00	0.03	96	\$12.67	3.79	
222.21	142 Offices	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95	
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12	
222.22	Conference Room	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522.0	\$69	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.02	72	\$9.50	4.42	
222.22	160 Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42	
222.22	Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42	
127.22	160 Restroom	3000	1	2	2x2, 2 Lamp, 34w T12 U-Tube, Mag. Ballast, Recessed Mnt., Prismatic Lens	72	0.07	216.0	\$29	1	2	2x2, 2 Lamp, 14w T5, Indirect; Fixture	31	0.03	93	\$12.28	\$215.00	\$215.00	0.04	123	\$16.24	13.24	
232.22	158	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774.0	\$102	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	648	\$85.54	\$21.00	\$63.00	0.04	126	\$16.63	3.79	
232.22	161 Courtroom	3000	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.86	2,580.0	\$341	10	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.72	2160	\$285.12	\$21.00	\$210.00	0.14	420	\$55.44	3.79	
221.11	162 Courtroom	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95	
222.22	210 Records	3000	26	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	1.51	4,524.0	\$597	26	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.30	3900	\$514.80	\$14.00	\$364.00	0.21	624	\$82.37	4.42	

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
221.11	210 Restroom	3000	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	3,348.0	\$442	18	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.90	2700	\$356.40	\$14.00	\$252.00	0.22	648	\$85.54	2.95			
221.11	210 Restroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
111.14	File Viewer Lighting	3000	10	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.48	1,440.0	\$190	10	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.25	750	\$99.00	\$80.00	\$800.00	0.23	690	\$91.08	8.78			
222.22	Server Room	3000	1	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.06	174.0	\$23	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	24	\$3.17	4.42			
222.22	210 Back Offices (3)	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.05	144	\$19.01	4.42			
222.22	210 Large Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42			
227.21	210 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79			
222.22	Open Office	3000	42	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	2.44	7,308.0	\$965	42	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	2.10	6300	\$831.60	\$14.00	\$588.00	0.34	1008	\$133.06	4.42			
222.22	211 Surrogate's Court	3000	20	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	1.16	3,480.0	\$459	20	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.00	3000	\$396.00	\$14.00	\$280.00	0.16	480	\$63.36	4.42			
221.11	219 Waiting	3000	32	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.98	5,952.0	\$786	32	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.60	4800	\$633.60	\$14.00	\$448.00	0.38	1152	\$152.06	2.95			
221.11	Arbitration Rooms (6)	3000	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	2,232.0	\$295	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1800	\$237.60	\$14.00	\$168.00	0.14	432	\$57.02	2.95			
221.11	Arbitration Hall	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1,302.0	\$172	7	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.35	1050	\$138.60	\$14.00	\$98.00	0.08	252	\$33.26	2.95			
221.12	Main Stairway	8760	10	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.62	5,431.2	\$717	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	4380	\$578.16	\$14.00	\$140.00	0.12	1051.2	\$138.76	1.01			
290	Hudson Street Entrance	8760	8	52	15' Rnd, 52 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., White Diffuser	1612	12.90	112,969.0	\$14,912	8	52	Relamp - Sylvania Lamp FO28/841/SS/ECO	1300	10.40	91104	\$12,025.73	\$364.00	\$2,912.00	2.50	21864.96	\$2,886.17	1.01			
222.22	118 Finance Open Office	3000	38	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	2.20	6,612.0	\$873	38	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.90	5700	\$752.40	\$14.00	\$532.00	0.30	912	\$120.38	4.42			
222.22	118 Side Offices (4)	3000	8	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.46	1,392.0	\$184	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.06	192	\$25.34	4.42			
222.22	118 Side offices (6)	3000	12	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.70	2,088.0	\$276	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1800	\$237.60	\$14.00	\$168.00	0.10	288	\$38.02	4.42			
227.21	118 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79			
221.11	Mail Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
111.14	File Viewer Lighting	3000	4	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.19	576.0	\$76	4	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.10	300	\$39.60	\$80.00	\$320.00	0.09	276	\$36.43	8.78			
222.22	Payment Window Area	3000	10	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.58	1,740.0	\$230	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	1500	\$198.00	\$14.00	\$140.00	0.08	240	\$31.68	4.42			
222.22	Payment Window Public Area	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.05	144	\$19.01	4.42			
221.11	119 Mech Room	1200	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	74.4	\$10	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	60	\$7.92	\$14.00	\$14.00	0.01	14.4	\$1.90	7.37			
221.11	119 Conference Room	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95			
221.11	119 Lunch Room	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
232.21	109 Offices	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1,548.0	\$204	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1296	\$171.07	\$21.00	\$126.00	0.08	252	\$33.26	3.79			
221.11		3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95			
227.21	109 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79			
221.11	109 Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95			
221.11	109 Side Office	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95			
222.21	163 Offices	3000	38	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	2.36	7,068.0	\$933	38	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.90	5700	\$752.40	\$14.00	\$532.00	0.46	1368	\$180.58	2.95			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
222.21	Lunch Room	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95			
612.2	Back Stairs	8760	12	1	Pendant Mnt., 100w A19 Lamp	100	1.20	10,512.0	\$1,388	12	1	(1) 26w CFL Lamp	26	0.31	2733.12	\$360.77	\$20.00	\$240.00	0.89	7778.88	\$1,026.81	0.23			
221.11	265 Offices	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
623	207 Judges Chambers	3000	1	8	Hanging Chandelier, (8) 25w Cand. Base Lamp	200	0.20	600.0	\$79	1	8	3w LED Candalabra Base, Dimmable Lamp	24	0.02	72	\$9.50	\$240.00	\$240.00	0.18	528	\$69.70	3.44			
100	207 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126.0	\$17	1	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.03	99	\$13.07	\$60.00	\$60.00	0.01	27	\$3.56	16.84			
222.21	Office D	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
222.21	Office C	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
222.21	Judge's Chambers	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95			
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79			
555	Chamber Hall	3000	4	1	Recessed Down Light, 65w BR30 Lamp	65	0.26	780.0	\$103	4	1	26w CFL Flood Lamp	26	0.10	312	\$41.18	\$20.00	\$80.00	0.16	468	\$61.78	1.30			
222.22	263 Court Room	3000	10	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.58	1,740.0	\$230	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	1500	\$198.00	\$14.00	\$140.00	0.08	240	\$31.68	4.42			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
222.21	266 Offices	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
222.21	266 Hall	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558.0	\$74	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.04	108	\$14.26	2.95			
222.22	252 Court Room	3000	10	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.58	1,740.0	\$230	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	1500	\$198.00	\$14.00	\$140.00	0.08	240	\$31.68	4.42			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
222.21	254 Offices	3000	5	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95			
222.21	254 Offices	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95			
222.21	254 Offices	3000	5	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930.0	\$123	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.25	750	\$99.00	\$14.00	\$70.00	0.06	180	\$23.76	2.95			
100	254 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126.0	\$17	1	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.03	99	\$13.07	\$60.00	\$60.00	0.01	27	\$3.56	16.84			
650	253 Courtroom	3000	12	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.24	720.0	\$95	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
551		3000	7	1	Recessed Down Light, 100w A Lamp	100	0.70	2,100.0	\$277	7	1	26w CFL Lamp	26	0.18	546	\$72.07	\$20.00	\$140.00	0.52	1554	\$205.13	0.68			
227.21	265 Courtroom	3000	22	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	1.43	4,290.0	\$566	22	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	1.08	3234	\$426.89	\$24.00	\$528.00	0.35	1056	\$139.39	3.79			
560		3000	7	1	Recessed Down Light, 26w CFL Lamp	26	0.18	546.0	\$72	7	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
222.21	257 Office	3000	11	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.68	2,046.0	\$270	11	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.55	1650	\$217.80	\$14.00	\$154.00	0.13	396	\$52.27	2.95			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING					SAVINGS							
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.21	257 Judge's Chamber	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
227.21	257 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79
222.21	259 Office	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12
222.21	259 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
222.21	260 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
560	Office F	3000	4	1	Recessed Down Light, 26w CFL Lamp	26	0.10	312.0	\$41	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
612.2	Restroom	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68
222.22	Office E	3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348.0	\$46	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	48	\$6.34	4.42
222.22	Training Division	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42
222.22	Com Outreach	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42
222.22	Office C	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696.0	\$92	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.03	96	\$12.67	4.42
560	Office G	3000	7	1	Recessed Down Light, 26w CFL Lamp	26	0.18	546.0	\$72	7	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Operations Room	8760	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	2,032.3	\$268	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	1752	\$231.26	\$14.00	\$56.00	0.03	280.32	\$37.00	1.51
221.11		8760	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	1,629.4	\$215	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	1314	\$173.45	\$14.00	\$42.00	0.04	315.36	\$41.63	1.01
221.11	Locker Room	8760	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	1,629.4	\$215	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	1314	\$173.45	\$14.00	\$42.00	0.04	315.36	\$41.63	1.01
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79
221.11	Accreditation Unit	6000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	1,116.0	\$147	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	900	\$118.80	\$14.00	\$42.00	0.04	216	\$28.51	1.47
221.11	Stairwell	8760	10	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.62	5,431.2	\$717	10	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.50	4380	\$578.16	\$14.00	\$140.00	0.12	1051.2	\$138.76	1.01

Investment Grade Lighting Audit

APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
227.21	Warrant Office	6000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	2,340.0	\$309	6	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.29	1764	\$232.85	\$24.00	\$144.00	0.10	576	\$76.03	1.89			
222.22	Circle	8760	15	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.87	7,621.2	\$1,006	15	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.75	6570	\$867.24	\$14.00	\$210.00	0.12	1051.2	\$138.76	1.51			
560	Circle Restroom	3000	2	1	Recessed Down Light, 26w CFL Lamp	26	0.05	156.0	\$21	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.22	Process Officer	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1,506.7	\$199	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	1261.44	\$166.51	\$21.00	\$42.00	0.03	245.28	\$32.38	1.30			
232.22	Locker Room	8760	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	4,520.2	\$597	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	3784.32	\$499.53	\$21.00	\$126.00	0.08	735.84	\$97.13	1.30			
232.22	Alcotest Room	6000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1,032.0	\$136	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	864	\$114.05	\$21.00	\$42.00	0.03	168	\$22.18	1.89			
232.22	Cells/ Sally Port	8760	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	6,026.9	\$796	8	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.58	5045.76	\$666.04	\$21.00	\$168.00	0.11	981.12	\$129.51	1.30			
649		8760	13	2	1x1 Surface Mount, Prismatic Lens, (2) 13w CFL Lamp	26	0.34	2,960.9	\$391	13	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
142.21	Old Kitchen (storage)	8760	10	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.56	13,665.6	\$1,804	10	3	3 Lamp , FO28, T8, Elect. Ballast, Specular Reflector; retrofit	72	0.72	6307.2	\$832.55	\$100.00	\$1,000.00	0.84	7358.4	\$971.31	1.03			
237.21	Interview Room Hall	8760	4	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.21	1,822.1	\$241	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
237.21	Interview Rooms 1,2, and 3	8760	7	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.36	3,188.6	\$421	7	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
237.21	Server Room	6000	2	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.10	624.0	\$82	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.21	Out of County Holding Cell	6000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	1,548.0	\$204	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	1296	\$171.07	\$21.00	\$63.00	0.04	252	\$33.26	1.89			
649		6000	3	2	1x1 Surface Mount, Prismatic Lens, (2) 13w CFL Lamp	26	0.08	468.0	\$62	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
211.21	Court Security Office	8760	3	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.10	867.2	\$114	3	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.08	657	\$86.72	\$7.00	\$21.00	0.02	210.24	\$27.75	0.76			
211.21	Fingerprint Room	8760	2	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.07	578.2	\$76	2	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.05	438	\$57.82	\$7.00	\$14.00	0.02	140.16	\$18.50	0.76			
142.14	Lunch Room	8760	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	156	0.16	1,366.6	\$180	1	3	3 Lamp , FO28, T8, Elect. Ballast, Specular Reflector; retrofit	72	0.07	630.72	\$83.26	\$100.00	\$100.00	0.08	735.84	\$97.13	1.03			
242.21	IT Division	3000	8	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.86	2,568.0	\$339	8	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.78	2352	\$310.46	\$28.00	\$224.00	0.07	216	\$28.51	7.86			
242.21	IT Office	3000	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1,284.0	\$169	4	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.39	1176	\$155.23	\$28.00	\$112.00	0.04	108	\$14.26	7.86			

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
613	IT Restroom	3000	1	1	Industrial Fixture, 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68			
232.22	101 Records	3000	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.43	1,290.0	\$170	5	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.36	1080	\$142.56	\$21.00	\$105.00	0.07	210	\$27.72	3.79			
221.11		3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95			
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12			
242.21	104 Court Reporting	3000	8	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.86	2,568.0	\$339	8	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.78	2352	\$310.46	\$28.00	\$224.00	0.07	216	\$28.51	7.86			
264.21	Court Street Entrance	8760	9	6	4x4, 6 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., White	172	1.55	13,560.5	\$1,790	9	6	Relamp - Sylvania Lamp FO28/841/SS/ECO	148	1.33	11668.32	\$1,540.22	\$42.00	\$378.00	0.22	1892.16	\$249.77	1.51			
211.11		8760	8	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.26	2,312.6	\$305	8	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.20	1752	\$231.26	\$7.00	\$56.00	0.06	560.64	\$74.00	0.76			
221.11	Men's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95			
221.11	Women's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95			
221.11	102 Domestic Violence	3000	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3,906.0	\$516	21	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.05	3150	\$415.80	\$14.00	\$294.00	0.25	756	\$99.79	2.95			
222.22	102 Office	3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348.0	\$46	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	48	\$6.34	4.42			
237.21	2nd Floor Corridor	8760	54	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	2.81	24,598.1	\$3,247	54	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
221.11	205 Inmate Elevator	8760	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	543.1	\$72	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	438	\$57.82	\$14.00	\$14.00	0.01	105.12	\$13.88	1.01			
227.21	Men's Restroom	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1,170.0	\$154	6	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.29	882	\$116.42	\$24.00	\$144.00	0.10	288	\$38.02	3.79			
227.21	Women's Restroom	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1,170.0	\$154	6	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.29	882	\$116.42	\$24.00	\$144.00	0.10	288	\$38.02	3.79			
222.22	206 Prosecutor	3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348.0	\$46	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	48	\$6.34	4.42			
612.2	Custodial Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71			
221.11	222 Lockerroom	6000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	2,232.0	\$295	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	1800	\$237.60	\$14.00	\$84.00	0.07	432	\$57.02	1.47			
211.11	221 Records	3000	32	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	1.06	3,168.0	\$418	32	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.80	2400	\$316.80	\$7.00	\$224.00	0.26	768	\$101.38	2.21			

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APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING					SAVINGS							
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.12	214 Judge's Chamber	3000	9	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.56	1,674.0	\$221	9	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.45	1350	\$178.20	\$14.00	\$126.00	0.11	324	\$42.77	2.95
211.11	212 Grand Jury	3000	30	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.99	2,970.0	\$392	30	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.75	2250	\$297.00	\$7.00	\$210.00	0.24	720	\$95.04	2.21
221.15		3000	10	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.58	1,740.0	\$230	10	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.11	Storage	1200	6	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.20	237.6	\$31	6	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.15	180	\$23.76	\$7.00	\$42.00	0.05	57.6	\$7.60	5.52
221.11	Corridor to Grand Jury	8760	11	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.68	5,974.3	\$789	11	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.55	4818	\$635.98	\$14.00	\$154.00	0.13	1156.32	\$152.63	1.01
221.11	Storage	1200	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	223.2	\$29	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	180	\$23.76	\$14.00	\$42.00	0.04	43.2	\$5.70	7.37
222.22	214 Judge's Chamber	3000	11	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.64	1,914.0	\$253	11	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.55	1650	\$217.80	\$14.00	\$154.00	0.09	264	\$34.85	4.42
222.22	Conference Room	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522.0	\$69	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.02	72	\$9.50	4.42
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79
222.22	Judge's Office	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522.0	\$69	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	450	\$59.40	\$14.00	\$42.00	0.02	72	\$9.50	4.42
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6/SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79
222.22	215 Courtroom	3000	16	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.93	2,784.0	\$367	16	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.80	2400	\$316.80	\$14.00	\$224.00	0.13	384	\$50.69	4.42
221.12	Men's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95
221.12	Women's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95
612.2	Custodial Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71
221.31	216 Lunch Room	6000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.25	1,488.0	\$196	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	1200	\$158.40	\$14.00	\$56.00	0.05	288	\$38.02	1.47
221.21	116 Open Office	3000	26	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.61	4,836.0	\$638	26	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.30	3900	\$514.80	\$14.00	\$364.00	0.31	936	\$123.55	2.95
613.1	116 Mech Room	1200	1	1	Industrial Fixture, 200w A19 Lamp	200	0.20	240.0	\$32	1	2	2 Lamp, 28w T8, Elec. Ballast, Pendant Mount, No Lens	50	0.05	60	\$7.92	\$195.00	\$195.00	0.15	180	\$23.76	8.21
222.21	116 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95

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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING					PROPOSED LIGHTING									SAVINGS								
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	(Unit Cost (INSTALLED))	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
242.21	116 Open Office	3000	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	4,494.0	\$593	14	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.37	4116	\$543.31	\$28.00	\$392.00	0.13	378	\$49.90	7.86
242.21	116 Side Office	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963.0	\$127	3	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.29	882	\$116.42	\$28.00	\$84.00	0.03	81	\$10.69	7.86
222.21	116 Storage	3000	26	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.61	4,836.0	\$638	26	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.30	3900	\$514.80	\$14.00	\$364.00	0.31	936	\$123.55	2.95
100	116 Restroom	3000	2	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.08	252.0	\$33	2	2	Reballast & Relamp; 17w T8 Elec. Ballast	33	0.07	198	\$26.14	\$60.00	\$120.00	0.02	54	\$7.13	16.84
222.21	116 Elevator Room	1200	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.06	74.4	\$10	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	60	\$7.92	\$14.00	\$14.00	0.01	14.4	\$1.90	7.37
222.21	116 Break Room	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
211.11	115 Civil Filing	3000	28	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.92	2,772.0	\$366	28	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.70	2100	\$277.20	\$7.00	\$196.00	0.22	672	\$88.70	2.21
221.31	110 Civil Records	3000	14	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.87	2,604.0	\$344	14	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.70	2100	\$277.20	\$14.00	\$196.00	0.17	504	\$66.53	2.95
111.14	110 File Viewer Light	3000	12	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.58	1,728.0	\$228	12	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.30	900	\$118.80	\$80.00	\$960.00	0.28	828	\$109.30	8.78
142.15	110 Breakroom	3000	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	156	0.16	468.0	\$62	1	3	3 Lamp , FO28, T8, Elect. Ballast, Specular Reflector; retrofit	72	0.07	216	\$28.51	\$100.00	\$100.00	0.08	252	\$33.26	3.01
222.21	113 Courtroom	3000	21	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.30	3,906.0	\$516	21	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.05	3150	\$415.80	\$14.00	\$294.00	0.25	756	\$99.79	2.95
222.21	Municipal Court	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
222.21	Municipal Court Offices	3000	14	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.87	2,604.0	\$344	14	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.70	2100	\$277.20	\$14.00	\$196.00	0.17	504	\$66.53	2.95
221.11	Men's Restroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
221.11	Women's Restroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
221.11	150 Drug Court	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744.0	\$98	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	600	\$79.20	\$14.00	\$56.00	0.05	144	\$19.01	2.95
221.11	120 Youth Services	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95
221.11	121 Gen Services	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95
221.11	122 Maintenance	6000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	1,488.0	\$196	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	1200	\$158.40	\$14.00	\$56.00	0.05	288	\$38.02	1.47

Investment Grade Lighting Audit

APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING									PROPOSED LIGHTING				SAVINGS									
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
221.31	Corridors	8760	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.37	3,258.7	\$430	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	2628	\$346.90	\$14.00	\$84.00	0.07	630.72	\$83.26	1.01
227.21		8760	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	3,416.4	\$451	6	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.29	2575.44	\$339.96	\$24.00	\$144.00	0.10	840.96	\$111.01	1.30
612.2	Custodial Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120.0	\$16	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.12	\$20.00	\$20.00	0.07	88.8	\$11.72	1.71
211.12	123 Law Library	3000	37	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	1.22	3,663.0	\$484	37	1	Relamp - Sylvania Lamp FO28/841/SS/ECO	25	0.93	2775	\$366.30	\$7.00	\$259.00	0.30	888	\$117.22	2.21
221.33		3000	16	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	58	0.93	2,784.0	\$367	16	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.80	2400	\$316.80	\$14.00	\$224.00	0.13	384	\$50.69	4.42
612.1	123 Closet	1200	1	1	Pendant Mnt., 75w A19 Lamp	75	0.08	90.0	\$12	1	1	(1) 18w CFL Lamp	18	0.02	21.6	\$2.85	\$20.00	\$20.00	0.06	68.4	\$9.03	2.22
221.11	124	3000	68	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	4.22	12,648.0	\$1,670	68	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	3.40	10200	\$1,346.40	\$14.00	\$952.00	0.82	2448	\$323.14	2.95
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23	1	1	LED Exit Sign	2	0.00	17.52	\$2.31	\$65.00	\$65.00	0.02	157.68	\$20.81	3.12
612.2	Mech Room	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300.0	\$40	1	1	(1) 26w CFL Lamp	26	0.03	78	\$10.30	\$20.00	\$20.00	0.07	222	\$29.30	0.68
221.11	Back Offices (3)	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1,488.0	\$196	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.40	1200	\$158.40	\$14.00	\$112.00	0.10	288	\$38.02	2.95
242.21	129 Mail Room	3000	7	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.75	2,247.0	\$297	7	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.69	2058	\$271.66	\$28.00	\$196.00	0.06	189	\$24.95	7.86
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390.0	\$51	2	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.10	294	\$38.81	\$24.00	\$48.00	0.03	96	\$12.67	3.79
221.11	Men's Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95
221.11	Women's Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186.0	\$25	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	150	\$19.80	\$14.00	\$14.00	0.01	36	\$4.75	2.95
242.21	130 Security	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963.0	\$127	3	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.29	882	\$116.42	\$28.00	\$84.00	0.03	81	\$10.69	7.86
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390.0	\$51	2	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.10	294	\$38.81	\$24.00	\$48.00	0.03	96	\$12.67	3.79
227.21	Hall	3000	5	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.33	975.0	\$129	5	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.25	735	\$97.02	\$24.00	\$120.00	0.08	240	\$31.68	3.79
227.21	Side Entrance	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195.0	\$26	1	2	Sylvania Lamp FBO30/841XP/6//SS/ECO	49	0.05	147	\$19.40	\$24.00	\$24.00	0.02	48	\$6.34	3.79
221.21	128 Hall	8760	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	3,258.7	\$430	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	2628	\$346.90	\$14.00	\$84.00	0.07	630.72	\$83.26	1.01

Investment Grade Lighting Audit

APPENDIX E
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ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS				
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback		
221.21	128 Telephone Room	3000	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.74	2,232.0	\$295	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1800	\$237.60	\$14.00	\$168.00	0.14	432	\$57.02	2.95		
221.21	127 Gen Services	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1,116.0	\$147	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.07	216	\$28.51	2.95		
222.22	126 Office	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1,044.0	\$138	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.30	900	\$118.80	\$14.00	\$84.00	0.05	144	\$19.01	4.42		
221.11	Side Office - Stigler	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372.0	\$49	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	300	\$39.60	\$14.00	\$28.00	0.02	72	\$9.50	2.95		
769	Boiler Room	8760	11	1	400w MH, Clear Lens	465	5.12	44,807.4	\$5,915	11	6	2x4 54w T5HO 6 Lamp w/Prismatic Lens	354	3.89	34111.44	\$4,502.71	\$240.00	\$2,640.00	1.22	10695.96	\$1,411.87	1.87		
612.2		8760	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	876.0	\$116	1	1	(1) 26w CFL Lamp	26	0.03	227.76	\$30.06	\$20.00	\$20.00	0.07	648.24	\$85.57	0.23		
221.14	Switchgear	8760	15	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.87	7,621.2	\$1,006	15	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
Totals				3,417	1087			949,300	\$125,308	3,417	957			160.9	621,824	\$82,081		\$61,860	47.8	191,413	\$25,267	2.45		

CEG Job #: 9C10085
 Project: Justice Center
 Address: 10 Main St
 Hackensack, NJ
 Building SF: 424,000

Justice Center

KWH COST: \$0.132
 (Estimated)

ECM #2: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
232.21	Courtroom 401	3000	40	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	3.44	10320	\$1,362.24	40	0	No Change	86	3.44	0%	10320	\$1,362.24	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.21	4th Floor Lobby	6000	12	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.62	3744	\$494.21	12	0	No Change	52	0.62	0%	3744	\$494.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	402 Judge's Chamber	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
221.25		3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
613.1	Mech Room	1200	3	1	Industrial Fixture, 200w A19 Lamp	200	0.60	720	\$95.04	3	0	No Change	200	0.60	0%	720	\$95.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
613.1	Elevator Equipment Room	1200	1	1	Industrial Fixture, 200w A19 Lamp	200	0.20	240	\$31.68	1	0	No Change	200	0.20	0%	240	\$31.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.22	4th Floor Corridor	6000	70	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	3.64	21840	\$2,882.88	70	0	No Change	52	3.64	0%	21840	\$2,882.88	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	404 Juror's Room	3000	37	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	3.18	9546	\$1,260.07	37	3	Dual Technology Occupancy Sensor - Remote Mnt.	86	2.55	20%	7636.8	\$1,008.06	\$450.00	\$1,350.00	0.64	1909.2	\$252.01	5.36
232.22	Jury Management Office	3000	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.86	2580	\$340.56	10	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.69	20%	2064	\$272.45	\$125.00	\$125.00	0.17	516	\$68.11	1.84
621	Old Jail	3000	14	1	Track Light, 100w A Lamp	100	1.40	4200	\$554.40	14	1	Dual Technology Occupancy Sensor - Remote Mnt.	100	1.12	20%	3360	\$443.52	\$450.00	\$450.00	0.28	840	\$110.88	4.06
221.11		1200	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	297.6	\$39.28	4	0	No Change	62	0.25	0%	297.6	\$39.28	\$0.00	\$0.00	0.00	0	\$0.00	0.00
121.14		1200	14	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	1.09	1310.4	\$172.97	14	0	No Change	78	1.09	0%	1310.4	\$172.97	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Men's Restroom 4E	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1170	\$154.44	6	0	No Change	65	0.39	0%	1170	\$154.44	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Women's Restroom 4E	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1170	\$154.44	6	0	No Change	65	0.39	0%	1170	\$154.44	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS									SAVINGS				
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.25	Courtroom 408	3000	34	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.11	6324	\$834.77	34	0	No Change	62	2.11	0%	6324	\$834.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
551		3000	4	1	Recessed Down Light, 100w A Lamp	100	0.40	1200	\$158.40	4	0	No Change	100	0.40	0%	1200	\$158.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.25	Courtroom 406	3000	34	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.11	6324	\$834.77	34	0	No Change	62	2.11	0%	6324	\$834.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
551		3000	4	1	Recessed Down Light, 100w A Lamp	100	0.40	1200	\$158.40	4	0	No Change	100	0.40	0%	1200	\$158.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	501 Hall	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930	\$122.76	5	0	No Change	62	0.31	0%	930	\$122.76	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.15	504 Judge's Chambers	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642	\$84.74	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.17	20%	513.6	\$67.80	\$125.00	\$125.00	0.04	128.4	\$16.95	7.38
221.11	502 Hall	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.31	930	\$122.76	5	0	No Change	62	0.31	0%	930	\$122.76	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	502 Office (3)	3000	11	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.68	2046	\$270.07	11	0	No Change	62	0.68	0%	2046	\$270.07	\$0.00	\$0.00	0.00	0	\$0.00	0.00
100	502 Restroom	1200	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	50.4	\$6.65	1	0	No Change	42	0.04	0%	50.4	\$6.65	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	406 Offices	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1302	\$171.86	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.35	20%	1041.6	\$137.49	\$125.00	\$125.00	0.09	260.4	\$34.37	3.64
221.25	406 Judge's Chambers	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
555		3000	1	1	Recessed Down Light, 65w BR30 Lamp	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Jury Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
221.11	405 Offices	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1302	\$171.86	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.35	20%	1041.6	\$137.49	\$125.00	\$125.00	0.09	260.4	\$34.37	3.64
221.25	405 Judge's Chambers	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
221.11	405 Jury Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36

ECM #2: Lighting Controls

EXISTING LIGHTING		PROPOSED LIGHTING CONTROLS								SAVINGS													
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
232.22	409 Servers	3000	9	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.77	2322	\$306.50	9	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.62	20%	1857.6	\$245.20	\$125.00	\$125.00	0.15	464.4	\$61.30	2.04
221.11	Stairway S3	8760	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	9776.16	\$1,290.45	18	0	No Change	62	1.12	0%	9776.16	\$1,290.45	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	410 Offices	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18
221.11	410 Judge's Chambers	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
3520	Restrooms	1200	2	2	Ceiling Mount White Globe, (2) 26w CFL Lamp	52	0.10	124.8	\$16.47	2	0	No Change	52	0.10	0%	124.8	\$16.47	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Jury Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
602	410 Hall	8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21		3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	0	No Change	62	0.19	0%	558	\$73.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.25	Courtroom 412	3000	34	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.11	6324	\$834.77	34	0	No Change	62	2.11	0%	6324	\$834.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
551		3000	4	1	Recessed Down Light, 100w A Lamp	100	0.40	1200	\$158.40	4	0	No Change	100	0.40	0%	1200	\$158.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.21	417 Stairway	8760	3	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.16	1366.56	\$180.39	3	0	No Change	52	0.16	0%	1366.56	\$180.39	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.25	417 Courtroom	3000	17	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	1.05	3162	\$417.38	17	0	No Change	62	1.05	0%	3162	\$417.38	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	417 Back Room	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963	\$127.12	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.26	20%	770.4	\$101.69	\$125.00	\$125.00	0.06	192.6	\$25.42	4.92
222.21	417 Chambers	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	417 Reception Area	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	258	\$34.06	1	0	No Change	86	0.09	0%	258	\$34.06	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	418 Offices	3000	9	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.56	1674	\$220.97	9	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.45	20%	1339.2	\$176.77	\$450.00	\$450.00	0.11	334.8	\$44.19	10.18

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
221.11	415 Open Offices	3000	22	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.36	4092	\$540.14	22	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.09	20%	3273.6	\$432.12	\$450.00	\$900.00	0.27	818.4	\$108.03	8.33
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	415 Breakroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
221.11	427 Open Office	3000	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	4464	\$589.25	24	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3571.2	\$471.40	\$450.00	\$900.00	0.30	892.8	\$117.85	7.64
222.21		3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	0	No Change	62	0.37	0%	1116	\$147.31	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	3	2	Incandescent Exit Sign	20	0.06	525.6	\$69.38	3	0	No Change	20	0.06	0%	525.6	\$69.38	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	425 Reception	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.30	20%	892.8	\$117.85	\$450.00	\$450.00	0.07	223.2	\$29.46	15.27
237.21	425 Hall	3000	18	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.94	2808	\$370.66	18	0	No Change	52	0.94	0%	2808	\$370.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.21	425 Back Offices	3000	8	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.42	1248	\$164.74	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	52	0.33	20%	998.4	\$131.79	\$125.00	\$125.00	0.08	249.6	\$32.95	3.79
222.21		3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	0	No Change	62	0.19	0%	558	\$73.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.25	425 End Office	3000	4	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., White Lens	65	0.26	780	\$102.96	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	65	0.21	20%	624	\$82.37	\$125.00	\$125.00	0.05	156	\$20.59	6.07
211.22	Judge's Chambers	3000	13	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, cove lighting	30	0.39	1170	\$154.44	13	1	Dual Technology Occupancy Sensor - Remote Mnt.	30	0.31	20%	936	\$123.55	\$450.00	\$450.00	0.08	234	\$30.89	14.57
227.25	425 Side Office	3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., White Lens	65	0.13	390	\$51.48	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	65	0.10	20%	312	\$41.18	\$125.00	\$125.00	0.03	78	\$10.30	12.14
612.2	Cust. Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Coffee/Sink Area	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING				PROPOSED LIGHTING CONTROLS								SAVINGS											
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
242.15	425 Side Office	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642	\$84.74	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.17	20%	513.6	\$67.80	\$125.00	\$125.00	0.04	128.4	\$16.95	7.38
237.21	425 File Storage	3000	4	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.21	624	\$82.37	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	52	0.17	20%	499.2	\$65.89	\$125.00	\$125.00	0.04	124.8	\$16.47	7.59
242.15	Human Resources	3000	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.43	1284	\$169.49	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.34	20%	1027.2	\$135.59	\$125.00	\$125.00	0.09	256.8	\$33.90	3.69
211.22	Judge's Chambers	3000	13	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, cove lighting	30	0.39	1170	\$154.44	13	1	Dual Technology Occupancy Sensor - Switch Mnt.	30	0.31	20%	936	\$123.55	\$125.00	\$125.00	0.08	234	\$30.89	4.05
242.15	425 Side Office	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642	\$84.74	2	0	No Change	107	0.21	0%	642	\$84.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Men's Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.15	425 Conference Room	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642	\$84.74	2	0	No Change	107	0.21	0%	642	\$84.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
241.11	425 Side Office	3000	1	4	1x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.10	312	\$41.18	1	0	No Change	104	0.10	0%	312	\$41.18	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.15	Women's Restroom	3000	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	174	\$22.97	1	0	No Change	58	0.06	0%	174	\$22.97	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.11	425 Conference Room	3000	6	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	107	0.64	1926	\$254.23	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.51	20%	1540.8	\$203.39	\$125.00	\$125.00	0.13	385.2	\$50.85	2.46
550		3000	10	1	Recessed Down Light, 50w MV Lamp	70	0.70	2100	\$277.20	10	1	Dual Technology Occupancy Sensor - Switch Mnt.	70	0.56	20%	1680	\$221.76	\$125.00	\$125.00	0.14	420	\$55.44	2.25
237.21	425 Reception	3000	7	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.36	1092	\$144.14	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	52	0.29	20%	873.6	\$115.32	\$125.00	\$125.00	0.07	218.4	\$28.83	4.34
237.21	425 Conference Room	3000	4	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.21	624	\$82.37	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	52	0.17	20%	499.2	\$65.89	\$125.00	\$125.00	0.04	124.8	\$16.47	7.59
550	426 Courtroom	3000	10	1	Recessed Down Light, 50w MV Lamp	70	0.70	2100	\$277.20	10	0	No Change	70	0.70	0%	2100	\$277.20	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	3	2	Incandescent Exit Sign	20	0.06	525.6	\$69.38	3	0	No Change	20	0.06	0%	525.6	\$69.38	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	423 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS										SAVINGS								
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.21	423 Judge's Chambers	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73
222.21	423 Side Office	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73
612.2	Back Stairway	6000	3	1	Pendant Mnt., 100w A19 Lamp	100	0.30	1800	\$237.60	3	0	No Change	100	0.30	0%	1800	\$237.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	513 Office	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18
222.21	511 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
122.21	510 Files	3000	8	2	2x4, 2-Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.62	1872	\$247.10	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.50	20%	1497.6	\$197.68	\$125.00	\$125.00	0.12	374.4	\$49.42	2.53
221.31	Mech Room	1200	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.25	297.6	\$39.28	4	0	No Change	62	0.25	0%	297.6	\$39.28	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	422 Conference Room	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49
222.21	421 Courtroom	3000	16	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.99	2976	\$392.83	16	0	No Change	62	0.99	0%	2976	\$392.83	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.12	Elevator Lobby	8760	12	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	6517.44	\$860.30	12	0	No Change	62	0.74	0%	6517.44	\$860.30	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	420 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
222.21	420 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.15	420 Judge's Chambers	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., White Lens	107	0.21	642	\$84.74	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.17	20%	513.6	\$67.80	\$125.00	\$125.00	0.04	128.4	\$16.95	7.38
237.21	420 Restroom	3000	2	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.10	312	\$41.18	2	0	No Change	52	0.10	0%	312	\$41.18	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.21	Women's Restroom 4N	3000	3	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.16	468	\$61.78	3	0	No Change	52	0.16	0%	468	\$61.78	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
650	456 Courtroom	3000	14	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.28	840	\$110.88	14	0	No Change	20	0.28	0%	840	\$110.88	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46.25	2	0	No Change	20	0.04	0%	350.4	\$46.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.12	456 Office	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
221.12	Men's Restroom 4N	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558	\$73.66	3	0	No Change	62	0.19	0%	558	\$73.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	354 Office	3000	5	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930	\$122.76	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.25	20%	744	\$98.21	\$125.00	\$125.00	0.06	186	\$24.55	5.09
650	353 Courtroom	3000	14	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.28	840	\$110.88	14	0	No Change	20	0.28	0%	840	\$110.88	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46.25	2	0	No Change	20	0.04	0%	350.4	\$46.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	353 Office	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	353 Office	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49
222.21	353 Judge's Chambers	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
100	Restrooms	1200	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	50.4	\$6.65	1	0	No Change	42	0.04	0%	50.4	\$6.65	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	353 Lunchroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73
650	359 Courtroom	3000	9	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.18	540	\$71.28	9	0	No Change	20	0.18	0%	540	\$71.28	\$0.00	\$0.00	0.00	0	\$0.00	0.00
621		3000	4	1	Track Light, 100w A Lamp	100	0.40	1200	\$158.40	4	0	No Change	100	0.40	0%	1200	\$158.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Court Clerk	3000	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	174	\$22.97	1	0	No Change	58	0.06	0%	174	\$22.97	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Secretary Office	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
626	Restrooms	1200	1	3	Strip Light, (3) 40w G40 Lamp	120	0.12	144	\$19.01	1	0	No Change	120	0.12	0%	144	\$19.01	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	359 Conference Room	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73
222.22	358 Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
650	358 Courtroom	3000	12	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.24	720	\$95.04	12	0	No Change	20	0.24	0%	720	\$95.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46.25	2	0	No Change	20	0.04	0%	350.4	\$46.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Judge's Chambers	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870	\$114.84	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.23	20%	696	\$91.87	\$125.00	\$125.00	0.06	174	\$22.97	5.44
227.21	Restrooms	1200	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	78	\$10.30	1	0	No Change	65	0.07	0%	78	\$10.30	\$0.00	\$0.00	0.00	0	\$0.00	0.00
111.14	Flag Light	3000	1	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.05	144	\$19.01	1	0	No Change	48	0.05	0%	144	\$19.01	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	358 Jury Rooms	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18
221.31	358 Office	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
612.2	Restrooms	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.31	358 Conference Room	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.05	20%	148.8	\$19.64	\$125.00	\$125.00	0.01	37.2	\$4.91	25.46
612.2	Restrooms	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	354 Courtroom	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1488	\$196.42	8	0	No Change	62	0.50	0%	1488	\$196.42	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	354 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.30	20%	892.8	\$117.85	\$450.00	\$450.00	0.07	223.2	\$29.46	15.27

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
612.2	Microwave Area	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00
612.2	Restrooms	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	354 Office	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49
222.25	305 Courtroom	3000	36	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.23	6696	\$883.87	36	0	No Change	62	2.23	0%	6696	\$883.87	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	305 Office	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49
3520	Women's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 26w CFL Lamp	52	0.05	156	\$20.59	1	0	No Change	52	0.05	0%	156	\$20.59	\$0.00	\$0.00	0.00	0	\$0.00	0.00
3520	Men's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 26w CFL Lamp	52	0.05	156	\$20.59	1	0	No Change	52	0.05	0%	156	\$20.59	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	305 Office	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1302	\$171.86	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.35	20%	1041.6	\$137.49	\$125.00	\$125.00	0.09	260.4	\$34.37	3.64
222.15	305 Judge's Chamber	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
221.11	301 Office	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
222.21	301 judge's Chambers	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
3520.1	301 Restroom	1200	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	144	\$19.01	1	0	No Change	120	0.12	0%	144	\$19.01	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	301 Courtroom	3000	10	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.62	1860	\$245.52	10	0	No Change	62	0.62	0%	1860	\$245.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.15	314 Courtroom	3000	30	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	1.74	5220	\$689.04	30	0	No Change	58	1.74	0%	5220	\$689.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46.25	2	0	No Change	20	0.04	0%	350.4	\$46.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.15	314 Jury Room	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS															SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback		
612.2	Restrooms	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
221.15	314 Office	3000	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54		
221.15	314 Judge's Chambers	3000	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54		
237.22	314 hall	3000	3	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.16	468	\$61.78	3	0	No Change	52	0.16	0%	468	\$61.78	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
221.15	315 Courtroom	3000	21	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	1.22	3654	\$482.33	21	0	No Change	58	1.22	0%	3654	\$482.33	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46.25	2	0	No Change	20	0.04	0%	350.4	\$46.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
221.15	315 Jury Room	3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80		
242.22	316 Office	3000	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	104	0.21	624	\$82.37	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.17	20%	499.2	\$65.89	\$125.00	\$125.00	0.04	124.8	\$16.47	7.59		
222.25	317 Courtroom	3000	20	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	1.24	3720	\$491.04	20	0	No Change	62	1.24	0%	3720	\$491.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
555		3000	3	1	Recessed Down Light, 65w BR30 Lamp	65	0.20	585	\$77.22	3	0	No Change	65	0.20	0%	585	\$77.22	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
222.22	310 Office	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54		
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390	\$51.48	2	0	No Change	65	0.13	0%	390	\$51.48	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
222.21	310 Judge's Chambers	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36		
222.21	310 Jury Room	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36		
222.25	311 Courtroom	3000	36	2	2x4, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	62	2.23	6696	\$883.87	36	0	No Change	62	2.23	0%	6696	\$883.87	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
555		3000	2	1	Recessed Down Light, 65w BR30 Lamp	65	0.13	390	\$51.48	2	0	No Change	65	0.13	0%	390	\$51.48	\$0.00	\$0.00	0.00	0	\$0.00	0.00		

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
100	311 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126	\$16.63	1	0	No Change	42	0.04	0%	126	\$16.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Municipal Division Hall	3000	6	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.64	1926	\$254.23	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.51	20%	1540.8	\$203.39	\$125.00	\$125.00	0.13	385.2	\$50.85	2.46
242.21	Conference Room	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	642	\$84.74	2	0	No Change	107	0.21	0%	642	\$84.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Office	3000	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1284	\$169.49	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.34	20%	1027.2	\$135.59	\$125.00	\$125.00	0.09	256.8	\$33.90	3.69
242.21	Office	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963	\$127.12	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.26	20%	770.4	\$101.69	\$125.00	\$125.00	0.06	192.6	\$25.42	4.92
242.21	Office	3000	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	642	\$84.74	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.17	20%	513.6	\$67.80	\$125.00	\$125.00	0.04	128.4	\$16.95	7.38
100	Restrooms (2)	3000	2	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.08	252	\$33.26	2	0	No Change	42	0.08	0%	252	\$33.26	\$0.00	\$0.00	0.00	0	\$0.00	0.00
237.22	3rd Floor Corridors	6000	94	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	4.89	29328	\$3,871.30	94	0	No Change	52	4.89	0%	29328	\$3,871.30	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	306 Courtroom	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	0	No Change	62	0.37	0%	1116	\$147.31	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	Bullpen	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
221.11	306 Jury Room	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
3520.1	Women's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	360	\$47.52	1	0	No Change	120	0.12	0%	360	\$47.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00
3520.1	Men's Restroom	3000	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	360	\$47.52	1	0	No Change	120	0.12	0%	360	\$47.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	306 Judge's Chambers	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
221.25		3000	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed, White Diffuser	58	0.23	696	\$91.87	4	0	No Change	58	0.23	0%	696	\$91.87	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
555		3000	1	1	Recessed Down Light, 65w BR30 Lamp	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	333 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
100	333 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126	\$16.63	1	0	No Change	42	0.04	0%	126	\$16.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	333 hall	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	0	No Change	62	0.37	0%	1116	\$147.31	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	4	2	Incandescent Exit Sign	20	0.08	700.8	\$92.51	4	0	No Change	20	0.08	0%	700.8	\$92.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	335 Jury Room	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	334 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
222.21	334A Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
222.21	334 Judge's Chamber	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
222.21	335 Judge's Chamber	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
222.21	332 Courtroom	3000	20	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.24	3720	\$491.04	20	0	No Change	62	1.24	0%	3720	\$491.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	335 Courtroom	3000	20	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.24	3720	\$491.04	20	0	No Change	62	1.24	0%	3720	\$491.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.22	330 Hall	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt. In Wall, Prismatic	62	0.19	558	\$73.66	3	0	No Change	62	0.19	0%	558	\$73.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS															SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback		
232.22	330 Office	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1238.4	\$163.47	\$125.00	\$125.00	0.10	309.6	\$40.87	3.06		
232.22	330 Judge's Chamber	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1032	\$136.22	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	825.6	\$108.98	\$125.00	\$125.00	0.07	206.4	\$27.24	4.59		
232.22	331 Courtroom	3000	16	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.38	4128	\$544.90	16	0	No Change	86	1.38	0%	4128	\$544.90	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
232.22	331 Jury Room	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1238.4	\$163.47	\$125.00	\$125.00	0.10	309.6	\$40.87	3.06		
626	Restroom	3000	1	3	Strip Light, (3) 40w G40 Lamp	120	0.12	360	\$47.52	1	0	No Change	120	0.12	0%	360	\$47.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
558	Lawyer's Lounge	3000	16	1	Recessed Down Light, 100w R30 Lamp	100	1.60	4800	\$633.60	16	1	Dual Technology Occupancy Sensor - Switch Mnt.	100	1.28	20%	3840	\$506.88	\$125.00	\$125.00	0.32	960	\$126.72	0.99		
222.22		3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	0	No Change	58	0.23	0%	696	\$91.87	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
222.21	327 Office	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73		
222.21	323 Office	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18		
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
232.22	323 Judges Chambers	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1032	\$136.22	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	825.6	\$108.98	\$125.00	\$125.00	0.07	206.4	\$27.24	4.59		
612.2	Restroom	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
612.2	Restroom	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
613.1	Mech Room	3000	2	1	Industrial Fixture, 200w A19 Lamp	200	0.40	1200	\$158.40	2	0	No Change	200	0.40	0%	1200	\$158.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
221.31	320 Storage	1200	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.12	148.8	\$19.64	2	0	No Change	62	0.12	0%	148.8	\$19.64	\$0.00	\$0.00	0.00	0	\$0.00	0.00		

ECM #2: Lighting Controls

EXISTING LIGHTING		PROPOSED LIGHTING CONTROLS								SAVINGS												Yearly \$ Savings	Yearly Simple Payback
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings		
222.41	Stair 5	8760	10	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	58	0.58	5080.8	\$670.67	10	0	No Change	58	0.58	0%	5080.8	\$670.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
612.2		8760	2	1	Pendant Mnt., 100w A19 Lamp	100	0.20	1752	\$231.26	2	0	No Change	100	0.20	0%	1752	\$231.26	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	Cafeteria	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.03	3096	\$408.67	12	0	No Change	86	1.03	0%	3096	\$408.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	340 Office	3000	7	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.60	1806	\$238.39	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.48	20%	1444.8	\$190.71	\$125.00	\$125.00	0.12	361.2	\$47.68	2.62
232.22	340 Restroom	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	258	\$34.06	1	0	No Change	86	0.09	0%	258	\$34.06	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	337 Office	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.03	3096	\$408.67	12	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.83	20%	2476.8	\$326.94	\$125.00	\$125.00	0.21	619.2	\$81.73	1.53
227.22	337 Judge's Chamber	3000	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54
227.22	337 Judge's Chamber	3000	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54
227.21	338 Courtroom	3000	20	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	1.30	3900	\$514.80	20	0	No Change	65	1.30	0%	3900	\$514.80	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	202 Prosecutor	3000	67	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	5.76	17286	\$2,281.75	67	6	Dual Technology Occupancy Sensor - Remote Mnt.	86	4.61	20%	13828.8	\$1,825.40	\$450.00	\$2,700.00	1.15	3457.2	\$456.35	5.92
242.21	202 Restroom	3000	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	321	\$42.37	1	0	No Change	107	0.11	0%	321	\$42.37	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	202 Restroom	3000	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	321	\$42.37	1	0	No Change	107	0.11	0%	321	\$42.37	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	202 Conference Room	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1238.4	\$163.47	\$125.00	\$125.00	0.10	309.6	\$40.87	3.06
232.22	202 Breakroom	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774	\$102.17	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	619.2	\$81.73	\$125.00	\$125.00	0.05	154.8	\$20.43	6.12
232.22	202 Green Room	3000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	516	\$68.11	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	412.8	\$54.49	\$125.00	\$125.00	0.03	103.2	\$13.62	9.18
237.22	207 Hall	3000	1	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.05	156	\$20.59	1	0	No Change	52	0.05	0%	156	\$20.59	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
232.22		3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	0	No Change	86	0.52	0%	1548	\$204.34	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	207 Office	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.03	3096	\$408.67	12	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.83	20%	2476.8	\$326.94	\$125.00	\$125.00	0.21	619.2	\$81.73	1.53
232.22	207 Side Offices (3)	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	0	No Change	86	0.52	0%	1548	\$204.34	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	207E	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1032	\$136.22	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	825.6	\$108.98	\$125.00	\$125.00	0.07	206.4	\$27.24	4.59
232.21	207M Mech Room	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	206.4	\$27.24	2	0	No Change	86	0.17	0%	206.4	\$27.24	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	207V Office	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1032	\$136.22	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	825.6	\$108.98	\$125.00	\$125.00	0.07	206.4	\$27.24	4.59
232.22	207I1 Interrogation	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	206.4	\$27.24	2	0	No Change	86	0.17	0%	206.4	\$27.24	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	207I2 Interrogation	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	206.4	\$27.24	2	0	No Change	86	0.17	0%	206.4	\$27.24	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Men's Restroom	1200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	103.2	\$13.62	1	0	No Change	86	0.09	0%	103.2	\$13.62	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Women's Restroom	1200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	103.2	\$13.62	1	0	No Change	86	0.09	0%	103.2	\$13.62	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	Press Room	3000	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	2064	\$272.45	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.55	20%	1651.2	\$217.96	\$125.00	\$125.00	0.14	412.8	\$54.49	2.29
221.22	207 Records	3000	32	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt. In Wall, Prismatic	62	1.98	5952	\$785.66	32	3	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.59	20%	4761.6	\$628.53	\$450.00	\$1,350.00	0.40	1190.4	\$157.13	8.59
232.22	207 R2 Staff	3000	30	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	2.58	7740	\$1,021.68	30	3	Dual Technology Occupancy Sensor - Remote Mnt.	86	2.06	20%	6192	\$817.34	\$450.00	\$1,350.00	0.52	1548	\$204.34	6.61
232.22	207 R3	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774	\$102.17	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	619.2	\$81.73	\$125.00	\$125.00	0.05	154.8	\$20.43	6.12
232.22	207 R2 Staff	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774	\$102.17	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	619.2	\$81.73	\$125.00	\$125.00	0.05	154.8	\$20.43	6.12
121.15	207A Office	3000	12	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.94	2808	\$370.66	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	78	0.75	20%	2246.4	\$296.52	\$450.00	\$450.00	0.19	561.6	\$74.13	6.07

ECM #2: Lighting Controls

EXISTING LIGHTING				PROPOSED LIGHTING CONTROLS								SAVINGS										Yearly	Yearly Simple
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Payback
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702	\$92.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.19	20%	561.6	\$74.13	\$125.00	\$125.00	0.05	140.4	\$18.53	6.74
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702	\$92.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.19	20%	561.6	\$74.13	\$125.00	\$125.00	0.05	140.4	\$18.53	6.74
121.15	207 Side Office	3000	2	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.16	468	\$61.78	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.12	20%	374.4	\$49.42	\$125.00	\$125.00	0.03	93.6	\$12.36	10.12
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702	\$92.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.19	20%	561.6	\$74.13	\$125.00	\$125.00	0.05	140.4	\$18.53	6.74
121.15	207 Side Office	3000	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.23	702	\$92.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.19	20%	561.6	\$74.13	\$125.00	\$125.00	0.05	140.4	\$18.53	6.74
121.15	Storage	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., White Lens	78	0.08	93.6	\$12.36	1	0	No Change	78	0.08	0%	93.6	\$12.36	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Vault	3000	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	3096	\$408.67	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.83	20%	2476.8	\$326.94	\$450.00	\$450.00	0.21	619.2	\$81.73	5.51
221.12	221 Open Office	3000	20	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.24	3720	\$491.04	20	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.99	20%	2976	\$392.83	\$450.00	\$900.00	0.25	744	\$98.21	9.16
232.11	Side Offices (10)	3000	20	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	5160	\$681.12	20	0	No Change	86	1.72	0%	5160	\$681.12	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.11	Storage	1200	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	107	0.11	128.4	\$16.95	1	0	No Change	107	0.11	0%	128.4	\$16.95	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	220 Open Office	3000	26	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.61	4836	\$638.35	26	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.29	20%	3868.8	\$510.68	\$450.00	\$900.00	0.32	967.2	\$127.67	7.05
222.11	Copy Room	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	Restroom	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	Women's Restroom	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	218 Open Offices	3000	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	4464	\$589.25	24	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3571.2	\$471.40	\$450.00	\$900.00	0.30	892.8	\$117.85	7.64
222.22	218 Side Offices (6)	3000	12	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.70	2088	\$275.62	12	0	No Change	58	0.70	0%	2088	\$275.62	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING				PROPOSED LIGHTING CONTROLS								SAVINGS											
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
221.11	218 Conference Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
227.21	201 Assist Pros Office	3000	5	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.33	975	\$128.70	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	65	0.26	20%	780	\$102.96	\$125.00	\$125.00	0.07	195	\$25.74	4.86
626	Restroom	3000	1	3	Strip Light, (3) 40w G40 Lamp	120	0.12	360	\$47.52	1	0	No Change	120	0.12	0%	360	\$47.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	201 Reception	3000	11	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.72	2145	\$283.14	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	65	0.57	20%	1716	\$226.51	\$450.00	\$450.00	0.14	429	\$56.63	7.95
612.2	Storage	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	204 Sheriff's Waiting Area	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1032	\$136.22	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	825.6	\$108.98	\$125.00	\$125.00	0.07	206.4	\$27.24	4.59
222.22	204 Hall	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870	\$114.84	5	0	No Change	58	0.29	0%	870	\$114.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	204 Office	3000	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	2064	\$272.45	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.55	20%	1651.2	\$217.96	\$125.00	\$125.00	0.14	412.8	\$54.49	2.29
232.22	204 Office	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1238.4	\$163.47	\$125.00	\$125.00	0.10	309.6	\$40.87	3.06
232.22	204 Office	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774	\$102.17	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	619.2	\$81.73	\$125.00	\$125.00	0.05	154.8	\$20.43	6.12
222.22	204 Office	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870	\$114.84	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.23	20%	696	\$91.87	\$125.00	\$125.00	0.06	174	\$22.97	5.44
222.22	Under Sheriff	3000	5	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.29	870	\$114.84	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.23	20%	696	\$91.87	\$125.00	\$125.00	0.06	174	\$22.97	5.44
127.22	Under Sheriff Restroom	1200	1	2	2x2, 2 Lamp, 34w T12 U-Tube, Mag. Ballast, Recessed Mnt., Prismatic Lens	72	0.07	86.4	\$11.40	1	0	No Change	72	0.07	0%	86.4	\$11.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Under Sheriff Reception	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54
222.22	Under Sheriff Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
222.22	PIC Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80

ECM #2: Lighting Controls

EXISTING LIGHTING				PROPOSED LIGHTING CONTROLS								SAVINGS										Yearly	Yearly Simple
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Payback
232.22	Conference Room	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1548	\$204.34	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1238.4	\$163.47	\$125.00	\$125.00	0.10	309.6	\$40.87	3.06
612.2	Restroom	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
111.14	204 Hall by Mail Slots	3000	1	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.05	144	\$19.01	1	0	No Change	48	0.05	0%	144	\$19.01	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22		3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348	\$45.94	2	0	No Change	58	0.12	0%	348	\$45.94	\$0.00	\$0.00	0.00	0	\$0.00	0.00
560	Inspector's Office	3000	9	1	Recessed Down Light, 26w CFL Lamp	26	0.23	702	\$92.66	9	1	Dual Technology Occupancy Sensor - Switch Mnt.	26	0.19	20%	561.6	\$74.13	\$125.00	\$125.00	0.05	140.4	\$18.53	6.74
222.22	Under Sheriff Smith	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522	\$68.90	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.14	20%	417.6	\$55.12	\$125.00	\$125.00	0.03	104.4	\$13.78	9.07
232.22	Office A	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	258	\$34.06	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.07	20%	206.4	\$27.24	\$125.00	\$125.00	0.02	51.6	\$6.81	18.35
232.22	Office B	3000	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	258	\$34.06	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.07	20%	206.4	\$27.24	\$125.00	\$125.00	0.02	51.6	\$6.81	18.35
3520.1	Office B Restroom	3000	1	2	Ceiling Mount White Globe, (2) 60w A Lamp	120	0.12	360	\$47.52	1	0	No Change	120	0.12	0%	360	\$47.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	261 Conference Room	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
612.2	Back Stairs	8760	6	1	Pendant Mnt., 100w A19 Lamp	100	0.60	5256	\$693.79	6	0	No Change	100	0.60	0%	5256	\$693.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	262 Court Room	3000	9	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.52	1566	\$206.71	9	0	No Change	58	0.52	0%	1566	\$206.71	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	2	2	Incandescent Exit Sign	20	0.04	350.4	\$46.25	2	0	No Change	20	0.04	0%	350.4	\$46.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.211	Court Room	3000	14	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt. In Wall, Prismatic	62	0.87	2604	\$343.73	14	0	No Change	62	0.87	0%	2604	\$343.73	\$0.00	\$0.00	0.00	0	\$0.00	0.00
558		3000	6	1	Recessed Down Light, 100w R30 Lamp	100	0.60	1800	\$237.60	6	0	No Change	100	0.60	0%	1800	\$237.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	Old Jury Room	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930	\$122.76	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.25	20%	744	\$98.21	\$125.00	\$125.00	0.06	186	\$24.55	5.09

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
232.22	Judge's Chambers	3000	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1032	\$136.22	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	825.6	\$108.98	\$125.00	\$125.00	0.07	206.4	\$27.24	4.59
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
128.34	Elevator Mech Room	4000	2	2	8' Channel, 2 Lamp, 75w T12, Mag. Ballast, Pendant Mnt., No Lens	142	0.28	1136	\$149.95	2	0	No Change	142	0.28	0%	1136	\$149.95	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Files	3000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390	\$51.48	2	0	No Change	65	0.13	0%	390	\$51.48	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	142 Offices	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Conference Room	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522	\$68.90	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.14	20%	417.6	\$55.12	\$125.00	\$125.00	0.03	104.4	\$13.78	9.07
222.22	160 Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
222.22	Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
127.22	160 Restroom	3000	1	2	2x2, 2 Lamp, 34w T12 U-Tube, Mag. Ballast, Recessed Mnt., Prismatic Lens	72	0.07	216	\$28.51	1	0	No Change	72	0.07	0%	216	\$28.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	158	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	774	\$102.17	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	619.2	\$81.73	\$125.00	\$125.00	0.05	154.8	\$20.43	6.12
232.22	161 Courtroom	3000	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.86	2580	\$340.56	10	0	No Change	86	0.86	0%	2580	\$340.56	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	162 Courtroom	3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.31	930	\$122.76	5	0	No Change	62	0.31	0%	930	\$122.76	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	210 Restroom	3000	26	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	1.51	4524	\$597.17	26	0	No Change	58	1.51	0%	4524	\$597.17	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
221.11		3000	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	3348	\$441.94	18	0	No Change	62	1.12	0%	3348	\$441.94	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	210 Restroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	0	No Change	62	0.25	0%	744	\$98.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
111.14	File Viewer Lighting	3000	10	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.48	1440	\$190.08	10	0	No Change	48	0.48	0%	1440	\$190.08	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Server Room	3000	1	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.06	174	\$22.97	1	0	No Change	58	0.06	0%	174	\$22.97	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	210 Back Offices (3)	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	0	No Change	58	0.35	0%	1044	\$137.81	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	210 Large Office	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
227.21	210 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Open Office	3000	42	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	2.44	7308	\$964.66	42	4	Dual Technology Occupancy Sensor - Remote Mnt.	58	1.95	20%	5846.4	\$771.72	\$450.00	\$1,800.00	0.49	1461.6	\$192.93	9.33
222.22	211 Surrogate's Court	3000	20	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	1.16	3480	\$459.36	20	0	No Change	58	1.16	0%	3480	\$459.36	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	219 Waiting	3000	32	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.98	5952	\$785.66	32	3	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.59	20%	4761.6	\$628.53	\$450.00	\$1,350.00	0.40	1190.4	\$157.13	8.59
221.11	Arbitration Rooms (6)	3000	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	2232	\$294.62	12	0	No Change	62	0.74	0%	2232	\$294.62	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Arbitration Hall	3000	7	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.43	1302	\$171.86	7	0	No Change	62	0.43	0%	1302	\$171.86	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.12	Main Stairway	8760	10	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.62	5431.2	\$716.92	10	0	No Change	62	0.62	0%	5431.2	\$716.92	\$0.00	\$0.00	0.00	0	\$0.00	0.00
290	Hudson Street Entrance	8760	8	52	15' Rnd, 52 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., White Diffuser	1612	12.90	112968.96	\$14,911.90	8	0	No Change	1612	12.90	0%	112968.96	\$14,911.90	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	118 Finance Open Office	3000	38	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	2.20	6612	\$872.78	38	0	No Change	58	2.20	0%	6612	\$872.78	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	118 Side Offices (4)	3000	8	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.46	1392	\$183.74	8	0	No Change	58	0.46	0%	1392	\$183.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING				PROPOSED LIGHTING CONTROLS								SAVINGS										Yearly	Yearly Simple
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Payback
222.22	118 Side offices (6)	3000	12	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.70	2088	\$275.62	12	0	No Change	58	0.70	0%	2088	\$275.62	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	118 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Mail Room	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	0	No Change	62	0.25	0%	744	\$98.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
111.14	File Viewer Lighting	3000	4	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.19	576	\$76.03	4	0	No Change	48	0.19	0%	576	\$76.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Payment Window Area	3000	10	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.58	1740	\$229.68	10	1	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.46	20%	1392	\$183.74	\$450.00	\$450.00	0.12	348	\$45.94	9.80
222.22	Payment Window Public Area	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	0	No Change	58	0.35	0%	1044	\$137.81	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	119 Mech Room	1200	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	74.4	\$9.82	1	0	No Change	62	0.06	0%	74.4	\$9.82	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	119 Conference Room	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18
221.11	119 Lunch Room	3000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49
232.21	109 Offices	3000	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1548	\$204.34	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1238.4	\$163.47	\$125.00	\$125.00	0.10	309.6	\$40.87	3.06
221.11		3000	5	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.31	930	\$122.76	5	0	No Change	62	0.31	0%	930	\$122.76	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	109 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	109 Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	109 Side Office	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	163 Offices	3000	38	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	2.36	7068	\$932.98	38	4	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.88	20%	5654.4	\$746.38	\$450.00	\$1,800.00	0.47	1413.6	\$186.60	9.65
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING				PROPOSED LIGHTING CONTROLS								SAVINGS											
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.21	Lunch Room	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
612.2	Back Stairs	8760	12	1	Pendant Mnt., 100w A19 Lamp	100	1.20	10512	\$1,387.58	12	0	No Change	100	1.20	0%	10512	\$1,387.58	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	265 Offices	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
623	207 Judges Chambers	3000	1	8	Hanging Chandelier, (8) 25w Cand. Base Lamp	200	0.20	600	\$79.20	1	0	No Change	200	0.20	0%	600	\$79.20	\$0.00	\$0.00	0.00	0	\$0.00	0.00
100	207 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126	\$16.63	1	0	No Change	42	0.04	0%	126	\$16.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Office D	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
222.21	Office C	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	446.4	\$58.92	\$125.00	\$125.00	0.04	111.6	\$14.73	8.49
222.21	Judge's Chambers	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
555	Chamber Hall	3000	4	1	Recessed Down Light, 65w BR30 Lamp	65	0.26	780	\$102.96	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	65	0.21	20%	624	\$82.37	\$125.00	\$125.00	0.05	156	\$20.59	6.07
222.22	263 Court Room	3000	10	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.58	1740	\$229.68	10	0	No Change	58	0.58	0%	1740	\$229.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	266 Offices	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
222.21	266 Hall	3000	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.19	558	\$73.66	3	0	No Change	62	0.19	0%	558	\$73.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	252 Court Room	3000	10	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.58	1740	\$229.68	10	0	No Change	58	0.58	0%	1740	\$229.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING		PROPOSED LIGHTING CONTROLS								SAVINGS													
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
222.21	254 Offices	3000	5	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930	\$122.76	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.25	20%	744	\$98.21	\$125.00	\$125.00	0.06	186	\$24.55	5.09
222.21	254 Offices	3000	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73
222.21	254 Offices	3000	5	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.31	930	\$122.76	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.25	20%	744	\$98.21	\$125.00	\$125.00	0.06	186	\$24.55	5.09
100	254 Restroom	3000	1	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.04	126	\$16.63	1	0	No Change	42	0.04	0%	126	\$16.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00
650	253 Courtroom	3000	12	2	Wall Sconce, (1) 20w CFL G40 Lamp	20	0.24	720	\$95.04	12	0	No Change	20	0.24	0%	720	\$95.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
551		3000	7	1	Recessed Down Light, 100w A Lamp	100	0.70	2100	\$277.20	7	0	No Change	100	0.70	0%	2100	\$277.20	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	265 Courtroom	3000	22	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	1.43	4290	\$566.28	22	0	No Change	65	1.43	0%	4290	\$566.28	\$0.00	\$0.00	0.00	0	\$0.00	0.00
560		3000	7	1	Recessed Down Light, 26w CFL Lamp	26	0.18	546	\$72.07	7	0	No Change	26	0.18	0%	546	\$72.07	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	257 Office	3000	11	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.68	2046	\$270.07	11	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.55	20%	1636.8	\$216.06	\$125.00	\$125.00	0.14	409.2	\$54.01	2.31
222.21	257 Judge's Chamber	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
227.21	257 Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	259 Office	3000	8	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.50	1488	\$196.42	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.40	20%	1190.4	\$157.13	\$125.00	\$125.00	0.10	297.6	\$39.28	3.18
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	259 Office	3000	6	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24
222.21	260 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
560	Office F	3000	4	1	Recessed Down Light, 26w CFL Lamp	26	0.10	312	\$41.18	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	26	0.08	20%	249.6	\$32.95	\$125.00	\$125.00	0.02	62.4	\$8.24	15.18

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS								SAVINGS										
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
612.2	Restroom	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	Office E	3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348	\$45.94	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.09	20%	278.4	\$36.75	\$125.00	\$125.00	0.02	69.6	\$9.19	13.61
222.22	Training Division	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
222.22	Com Outreach	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
222.22	Office C	3000	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	696	\$91.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	556.8	\$73.50	\$125.00	\$125.00	0.05	139.2	\$18.37	6.80
560	Office G	3000	7	1	Recessed Down Light, 26w CFL Lamp	26	0.18	546	\$72.07	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	26	0.15	20%	436.8	\$57.66	\$125.00	\$125.00	0.04	109.2	\$14.41	8.67
222.22	Operations Room	8760	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.23	2032.32	\$268.27	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.19	20%	1625.856	\$214.61	\$125.00	\$125.00	0.05	406.464	\$53.65	2.33
221.11		8760	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	1629.36	\$215.08	3	0	No Change	62	0.19	0%	1629.36	\$215.08	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Locker Room	8760	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	1629.36	\$215.08	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	1303.488	\$172.06	\$125.00	\$125.00	0.04	325.872	\$43.02	2.91
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Accreditation Unit	6000	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	1116	\$147.31	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	892.8	\$117.85	\$125.00	\$125.00	0.04	223.2	\$29.46	4.24
221.11	Stairwell	8760	10	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.62	5431.2	\$716.92	10	0	No Change	62	0.62	0%	5431.2	\$716.92	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Warrant Office	6000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	2340	\$308.88	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	65	0.31	20%	1872	\$247.10	\$125.00	\$125.00	0.08	468	\$61.78	2.02
222.22	Circle	8760	15	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.87	7621.2	\$1,006.00	15	0	No Change	58	0.87	0%	7621.2	\$1,006.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
560	Circle Restroom	3000	2	1	Recessed Down Light, 26w CFL Lamp	26	0.05	156	\$20.59	2	0	No Change	26	0.05	0%	156	\$20.59	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	Process Officer	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1506.72	\$198.89	2	0	No Change	86	0.17	0%	1506.72	\$198.89	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS											SAVINGS					
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback			
232.22	Locker Room	8760	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	4520.16	\$596.66	6	0	No Change	86	0.52	0%	4520.16	\$596.66	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.22	Alcotest Room	6000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1032	\$136.22	2	0	No Change	86	0.17	0%	1032	\$136.22	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.22	Cells/ Sally Port	8760	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	6026.88	\$795.55	8	0	No Change	86	0.69	0%	6026.88	\$795.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
649		8760	13	2	1x1 Surface Mount, Prismatic Lens, (2) 13w CFL Lamp	26	0.34	2960.88	\$390.84	13	0	No Change	26	0.34	0%	2960.88	\$390.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
142.21	Old Kitchen (storage)	8760	10	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.56	13665.6	\$1,803.86	10	0	No Change	156	1.56	0%	13665.6	\$1,803.86	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
237.21	Interview Room Hall	8760	4	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.21	1822.08	\$240.51	4	0	No Change	52	0.21	0%	1822.08	\$240.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
237.21	Interview Rooms 1,2, and 3	8760	7	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.36	3188.64	\$420.90	7	0	No Change	52	0.36	0%	3188.64	\$420.90	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
237.21	Server Room	6000	2	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	0.10	624	\$82.37	2	0	No Change	52	0.10	0%	624	\$82.37	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
232.21	Out of County Holding Cell	6000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	1548	\$204.34	3	0	No Change	86	0.26	0%	1548	\$204.34	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
649		6000	3	2	1x1 Surface Mount, Prismatic Lens, (2) 13w CFL Lamp	26	0.08	468	\$61.78	3	0	No Change	26	0.08	0%	468	\$61.78	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
211.21	Court Security Office	8760	3	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.10	867.24	\$114.48	3	0	No Change	33	0.10	0%	867.24	\$114.48	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
211.21	Fingerprint Room	8760	2	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.07	578.16	\$76.32	2	0	No Change	33	0.07	0%	578.16	\$76.32	\$0.00	\$0.00	0.00	0	\$0.00	0.00			
142.14	Lunch Room	8760	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	156	0.16	1366.56	\$180.39	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.12	20%	1093.248	\$144.31	\$125.00	\$125.00	0.03	273.312	\$36.08	3.46			
242.21	IT Division	3000	8	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.86	2568	\$338.98	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.68	20%	2054.4	\$271.18	\$125.00	\$125.00	0.17	513.6	\$67.80	1.84			
242.21	IT Office	3000	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1284	\$169.49	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.34	20%	1027.2	\$135.59	\$125.00	\$125.00	0.09	256.8	\$33.90	3.69			
613	IT Restroom	3000	1	1	Industrial Fixture, 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00			

ECM #2: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS		Yearly	Yearly Simple
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	\$ Savings	Payback
232.22	101 Records	3000	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.43	1290	\$170.28	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.34	20%	1032	\$136.22	\$125.00	\$125.00	0.09	258	\$34.06	3.67
221.11		3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	104 Court Reporting	3000	8	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.86	2568	\$338.98	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.68	20%	2054.4	\$271.18	\$125.00	\$125.00	0.17	513.6	\$67.80	1.84
264.21	Court Street Entrance	8760	9	6	4x4, 6 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., White Diffuser	172	1.55	13560.48	\$1,789.98	9	0	No Change	172	1.55	0%	13560.48	\$1,789.98	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.11		8760	8	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.26	2312.64	\$305.27	8	0	No Change	33	0.26	0%	2312.64	\$305.27	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Men's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372	\$49.10	2	0	No Change	62	0.12	0%	372	\$49.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Women's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372	\$49.10	2	0	No Change	62	0.12	0%	372	\$49.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	102 Domestic Violence	3000	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3906	\$515.59	21	2	Dual Technology Occupancy Sensor - Switch Mnt.	62	1.04	20%	3124.8	\$412.47	\$125.00	\$250.00	0.26	781.2	\$103.12	2.42
222.22	102 Office	3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348	\$45.94	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.09	20%	278.4	\$36.75	\$125.00	\$125.00	0.02	69.6	\$9.19	13.61
237.21	2nd Floor Corridor	8760	54	3	2x2, 3 Lamp, 17w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	52	2.81	24598.08	\$3,246.95	54	0	No Change	52	2.81	0%	24598.08	\$3,246.95	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	205 Inmate Elevator	8760	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	543.12	\$71.69	1	0	No Change	62	0.06	0%	543.12	\$71.69	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Men's Restroom	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1170	\$154.44	6	0	No Change	65	0.39	0%	1170	\$154.44	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Women's Restroom	3000	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	1170	\$154.44	6	0	No Change	65	0.39	0%	1170	\$154.44	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.22	206 Prosecutor	3000	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.12	348	\$45.94	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.09	20%	278.4	\$36.75	\$125.00	\$125.00	0.02	69.6	\$9.19	13.61
612.2	Custodial Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS											SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback	
221.11	222 Lockerroom	6000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	2232	\$294.62	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	1785.6	\$235.70	\$125.00	\$125.00	0.07	446.4	\$58.92	2.12	
211.11	221 Records	3000	32	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	1.06	3168	\$418.18	32	0	No Change	33	1.06	0%	3168	\$418.18	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
222.12		3000	9	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.56	1674	\$220.97	9	0	No Change	62	0.56	0%	1674	\$220.97	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
211.11	212 Grand Jury	3000	30	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.99	2970	\$392.04	30	3	Dual Technology Occupancy Sensor - Remote Mnt.	33	0.79	20%	2376	\$313.63	\$450.00	\$1,350.00	0.20	594	\$78.41	17.22	
221.15		3000	10	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.58	1740	\$229.68	10	1	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.46	20%	1392	\$183.74	\$450.00	\$450.00	0.12	348	\$45.94	9.80	
211.11	Storage	1200	6	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.20	237.6	\$31.36	6	0	No Change	33	0.20	0%	237.6	\$31.36	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.11	Corridor to Grand Jury	8760	11	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.68	5974.32	\$788.61	11	0	No Change	62	0.68	0%	5974.32	\$788.61	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.11	Storage	1200	3	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.19	223.2	\$29.46	3	0	No Change	62	0.19	0%	223.2	\$29.46	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
222.22	214 Judge's Chamber	3000	11	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.64	1914	\$252.65	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.51	20%	1531.2	\$202.12	\$450.00	\$450.00	0.13	382.8	\$50.53	8.91	
222.22	Conference Room	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522	\$68.90	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.14	20%	417.6	\$55.12	\$125.00	\$125.00	0.03	104.4	\$13.78	9.07	
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
222.22	Judge's Office	3000	3	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.17	522	\$68.90	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.14	20%	417.6	\$55.12	\$125.00	\$125.00	0.03	104.4	\$13.78	9.07	
227.21	Restroom	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
222.22	215 Courtroom	3000	16	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.93	2784	\$367.49	16	0	No Change	58	0.93	0%	2784	\$367.49	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.12	Men's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372	\$49.10	2	0	No Change	62	0.12	0%	372	\$49.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.12	Women's Restroom	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372	\$49.10	2	0	No Change	62	0.12	0%	372	\$49.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00	

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS									SAVINGS											
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback		
612.2	Custodial Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
221.31	216 Lunch Room	6000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.25	1488	\$196.42	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	1190.4	\$157.13	\$125.00	\$125.00	0.05	297.6	\$39.28	3.18		
221.21	116 Open Office	3000	26	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.61	4836	\$638.35	26	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.29	20%	3868.8	\$510.68	\$450.00	\$900.00	0.32	967.2	\$127.67	7.05		
613.1	116 Mech Room	1200	1	1	Industrial Fixture, 200w A19 Lamp	200	0.20	240	\$31.68	1	0	No Change	200	0.20	0%	240	\$31.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
222.21	116 Office	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36		
242.21	116 Open Office	3000	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	4494	\$593.21	14	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	1.20	20%	3595.2	\$474.57	\$125.00	\$125.00	0.30	898.8	\$118.64	1.05		
242.21	116 Side Office	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963	\$127.12	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.26	20%	770.4	\$101.69	\$125.00	\$125.00	0.06	192.6	\$25.42	4.92		
222.21	116 Storage	3000	26	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.61	4836	\$638.35	26	2	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.29	20%	3868.8	\$510.68	\$450.00	\$900.00	0.32	967.2	\$127.67	7.05		
100	116 Restroom	3000	2	2	2' Vanity Light, 2-Lamp, 20w T12, Mag. Ballast, Wall Mnt., Glass Lens	42	0.08	252	\$33.26	2	0	No Change	42	0.08	0%	252	\$33.26	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
222.21	116 Elevator Room	1200	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.06	74.4	\$9.82	1	0	No Change	62	0.06	0%	74.4	\$9.82	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
222.21	116 Break Room	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36		
211.11	115 Civil Filing	3000	28	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	0.92	2772	\$365.90	28	3	Dual Technology Occupancy Sensor - Remote Mnt.	33	0.74	20%	2217.6	\$292.72	\$450.00	\$1,350.00	0.18	554.4	\$73.18	18.45		
221.31	110 Civil Records	3000	14	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.87	2604	\$343.73	14	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.69	20%	2083.2	\$274.98	\$450.00	\$450.00	0.17	520.8	\$68.75	6.55		
111.14	110 File Viewer Light	3000	12	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.58	1728	\$228.10	12	0	No Change	48	0.58	0%	1728	\$228.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00		
142.15	110 Breakroom	3000	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	156	0.16	468	\$61.78	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.12	20%	374.4	\$49.42	\$125.00	\$125.00	0.03	93.6	\$12.36	10.12		
222.21	113 Courtroom	3000	21	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	1.30	3906	\$515.59	21	0	No Change	62	1.30	0%	3906	\$515.59	\$0.00	\$0.00	0.00	0	\$0.00	0.00		

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS															SAVINGS							
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback				
222.21	Municipal Court	3000	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.25	744	\$98.21	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	595.2	\$78.57	\$125.00	\$125.00	0.05	148.8	\$19.64	6.36				
222.21	Municipal Court Offices	3000	14	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.87	2604	\$343.73	14	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.69	20%	2083.2	\$274.98	\$450.00	\$450.00	0.17	520.8	\$68.75	6.55				
221.11	Men's Restroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	0	No Change	62	0.25	0%	744	\$98.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
221.11	Women's Restroom	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	0	No Change	62	0.25	0%	744	\$98.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
221.11	150 Drug Court	3000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	744	\$98.21	4	0	No Change	62	0.25	0%	744	\$98.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
221.11	120 Youth Services	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	892.8	\$117.85	\$125.00	\$125.00	0.07	223.2	\$29.46	4.24				
221.11	121 Gen Services	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
221.11	122 Maintenance	6000	4	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.25	1488	\$196.42	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	1190.4	\$157.13	\$125.00	\$125.00	0.05	297.6	\$39.28	3.18				
221.31	Corridors	8760	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.37	3258.72	\$430.15	6	0	No Change	62	0.37	0%	3258.72	\$430.15	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
227.21		8760	6	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.39	3416.4	\$450.96	6	0	No Change	65	0.39	0%	3416.4	\$450.96	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
612.2	Custodial Closet	1200	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	120	\$15.84	1	0	No Change	100	0.10	0%	120	\$15.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
211.12	123 Law Library	3000	37	1	1x4, 1 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	33	1.22	3663	\$483.52	37	3	Dual Technology Occupancy Sensor - Remote Mnt.	33	0.98	20%	2930.4	\$386.81	\$450.00	\$1,350.00	0.24	732.6	\$96.70	13.96				
221.33		3000	16	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	58	0.93	2784	\$367.49	16	2	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.74	20%	2227.2	\$293.99	\$450.00	\$900.00	0.19	556.8	\$73.50	12.25				
612.1	123 Closet	1200	1	1	Pendant Mnt., 75w A19 Lamp	75	0.08	90	\$11.88	1	0	No Change	75	0.08	0%	90	\$11.88	\$0.00	\$0.00	0.00	0	\$0.00	0.00				
221.11	124	3000	68	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	4.22	12648	\$1,669.54	68	6	Dual Technology Occupancy Sensor - Remote Mnt.	62	3.37	20%	10118.4	\$1,335.63	\$450.00	\$2,700.00	0.84	2529.6	\$333.91	8.09				
602		8760	1	2	Incandescent Exit Sign	20	0.02	175.2	\$23.13	1	0	No Change	20	0.02	0%	175.2	\$23.13	\$0.00	\$0.00	0.00	0	\$0.00	0.00				

ECM #2: Lighting Controls

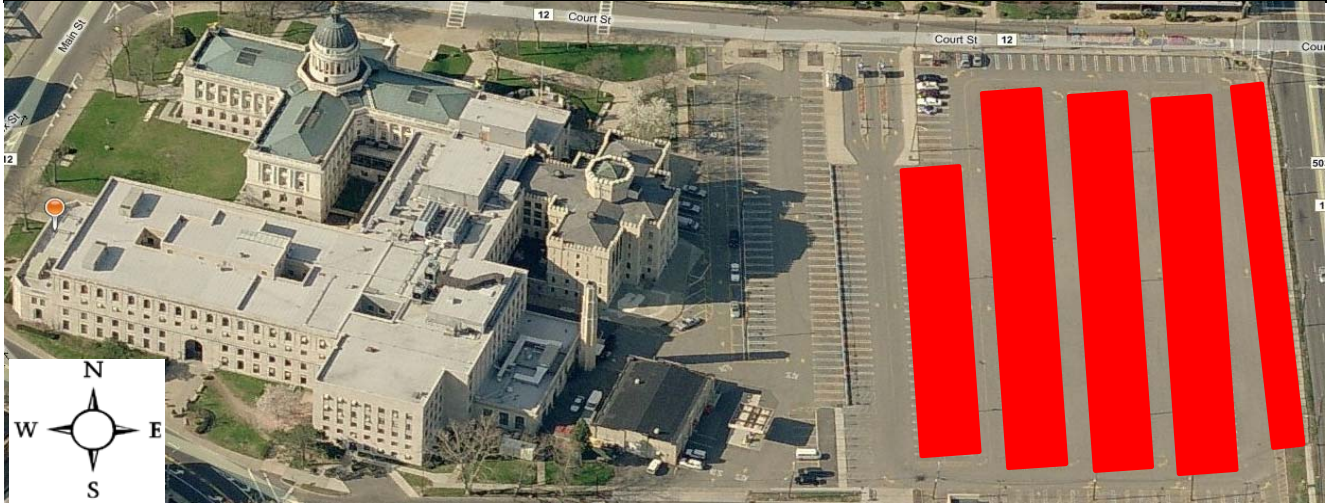
EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS										SAVINGS								
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
612.2	Mech Room	3000	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	300	\$39.60	1	0	No Change	100	0.10	0%	300	\$39.60	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Back Offices (3)	3000	8	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.50	1488	\$196.42	8	0	No Change	62	0.50	0%	1488	\$196.42	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	129 Mail Room	3000	7	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.75	2247	\$296.60	7	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.60	20%	1797.6	\$237.28	\$125.00	\$125.00	0.15	449.4	\$59.32	2.11
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390	\$51.48	2	0	No Change	65	0.13	0%	390	\$51.48	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Men's Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Women's Restroom	3000	1	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	186	\$24.55	1	0	No Change	62	0.06	0%	186	\$24.55	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	130 Security	3000	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	963	\$127.12	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.26	20%	770.4	\$101.69	\$125.00	\$125.00	0.06	192.6	\$25.42	4.92
227.21		3000	2	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.13	390	\$51.48	2	0	No Change	65	0.13	0%	390	\$51.48	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Hall	3000	5	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.33	975	\$128.70	5	0	No Change	65	0.33	0%	975	\$128.70	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Side Entrance	3000	1	2	2x2, 2 Lamp, 32w 700 series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	65	0.07	195	\$25.74	1	0	No Change	65	0.07	0%	195	\$25.74	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	128 Hall	8760	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	3258.72	\$430.15	6	0	No Change	62	0.37	0%	3258.72	\$430.15	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	128 Telephone Room	3000	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.74	2232	\$294.62	12	0	No Change	62	0.74	0%	2232	\$294.62	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	127 Gen Services	3000	6	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic	62	0.37	1116	\$147.31	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.30	20%	892.8	\$117.85	\$450.00	\$450.00	0.07	223.2	\$29.46	15.27
222.22	126 Office	3000	6	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.35	1044	\$137.81	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	835.2	\$110.25	\$125.00	\$125.00	0.07	208.8	\$27.56	4.54
221.11	Side Office - Stigler	3000	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	372	\$49.10	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	297.6	\$39.28	\$125.00	\$125.00	0.02	74.4	\$9.82	12.73
769	Boiler Room	8760	11	1	400w MH, Clear Lens	465	5.12	44807.4	\$5,914.58	11	0	No Change	465	5.12	0%	44807.4	\$5,914.58	\$0.00	\$0.00	0.00	0	\$0.00	0.00

ECM #2: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS											SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback	
612.2	DIRECT KNOW	8760	1	1	Pendant Mnt., 100w A19 Lamp	100	0.10	876	\$115.63	1	0	No Change	100	0.10	0%	876	\$115.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.14	Switchgear	8760	15	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.87	7621.2	\$1,006.00	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.70	20%	6096.96	\$804.80	\$450.00	\$450.00	0.17	1524.24	\$201.20	2.24	
Totals			3,417	1087			235.6	949,299.6	\$125,308	3,417	251			213.5		880,371.3	\$116,209.01		\$54,775	22.13	68,928	\$9,099	6.02	

Project Name: LGEA Solar PV Project - Bergen County Justice Center									
Location: Hackensack, NJ									
Description: Photovoltaic System - Direct Purchase									
Simple Payback Analysis									
		Photovoltaic System - Direct Purchase							
Total Construction Cost		\$6,557,760							
Annual kWh Production		890,147							
Annual Energy Cost Reduction		\$133,522							
Annual SREC Revenue		\$311,551							
First Cost Premium		\$6,557,760							
Simple Payback:		14.73				Years			
Life Cycle Cost Analysis									
Analysis Period (years):		25		Financing %:		0%			
Financing Term (mths):		0		Maintenance Escalation Rate:		3.0%			
Average Energy Cost (\$/kWh)		\$0.150		(Estimated)		Energy Cost Escalation Rate:		3.0%	
Financing Rate:		0.00%				SREC Value (\$/kWh)		\$0.350	
Period	Additional Cash Outlay	Energy kWh Production	Energy Cost Savings	Additional Maint Costs	SREC Revenue	Net Cash Flow	Cumulative Cash Flow		
0	\$6,557,760	0	0	0	\$0	(6,557,760)	0		
1	\$0	890,147	\$133,522	\$0	\$311,551	\$445,074	(\$6,112,687)		
2	\$0	885,696	\$137,528	\$0	\$309,994	\$447,521	(\$5,665,165)		
3	\$0	881,268	\$141,654	\$0	\$308,444	\$450,097	(\$5,215,068)		
4	\$0	876,861	\$145,903	\$0	\$306,902	\$452,805	(\$4,762,263)		
5	\$0	872,477	\$150,280	\$8,987	\$305,367	\$446,661	(\$4,315,602)		
6	\$0	868,115	\$154,789	\$8,942	\$303,840	\$449,687	(\$3,865,915)		
7	\$0	863,774	\$159,432	\$8,897	\$302,321	\$452,856	(\$3,413,059)		
8	\$0	859,455	\$164,215	\$8,852	\$300,809	\$456,172	(\$2,956,887)		
9	\$0	855,158	\$169,142	\$8,808	\$299,305	\$459,639	(\$2,497,248)		
10	\$0	850,882	\$174,216	\$8,764	\$297,809	\$463,261	(\$2,033,987)		
11	\$0	846,628	\$179,442	\$8,720	\$296,320	\$467,042	(\$1,566,945)		
12	\$0	842,395	\$184,826	\$8,677	\$294,838	\$470,987	(\$1,095,958)		
13	\$0	838,183	\$190,371	\$8,633	\$293,364	\$475,101	(\$620,857)		
14	\$0	833,992	\$196,082	\$8,590	\$291,897	\$479,389	(\$141,468)		
15	\$0	829,822	\$201,964	\$8,547	\$290,438	\$483,855	\$342,387		
16	\$0	825,673	\$208,023	\$8,504	\$288,985	\$488,504	\$830,891		
17	\$0	821,544	\$214,264	\$8,462	\$287,541	\$493,342	\$1,324,233		
18	\$0	817,437	\$220,692	\$8,420	\$286,103	\$498,375	\$1,822,608		
19	\$0	813,349	\$227,312	\$8,377	\$284,672	\$503,607	\$2,326,215		
20	\$0	809,283	\$234,132	\$8,336	\$283,249	\$509,045	\$2,835,260		
21	\$1	805,236	\$241,156	\$8,294	\$281,833	\$514,694	\$3,349,954		
22	\$2	801,210	\$248,390	\$8,252	\$280,424	\$520,561	\$3,870,516		
23	\$3	797,204	\$255,842	\$8,211	\$279,021	\$526,652	\$4,397,168		
24	\$4	793,218	\$263,517	\$8,170	\$277,626	\$532,973	\$4,930,142		
25	\$5	789,252	\$271,423	\$8,129	\$276,238	\$539,532	\$5,469,673		
Totals:		20,968,259	\$4,868,116	\$179,573	\$7,338,891	\$12,027,433	(\$12,764,061)		
Net Present Value (NPV)						\$5,469,698			
Internal Rate of Return (IRR)						5.1%			

Building	Roof Area (sq ft)	Panel	Qty	Panel Sq Ft	Panel Total Sq Ft	Total KW _{DC}	Total Annual kWh	Panel Weight (33 lbs)	W/SQFT
Bergen County Justice Center	51750	Sunpower SPR230	3168	14.7	46,583	728.64	890,147	104,544	15.64



[Red Box] := Proposed PV Layout

Notes:

1. Estimated kWh based on the National Renewable Energy Laboratory PVWatts Version 1 Calculator Program.



AC Energy & Cost Savings



(Type comments here to appear on printout; maximum 1 row of 80 characters.)

Station Identification	
City:	Atlantic_City
State:	New_Jersey
Latitude:	39.45° N
Longitude:	74.57° W
Elevation:	20 m
PV System Specifications	
DC Rating:	728.6 kW
DC to AC Derate Factor:	0.810
AC Rating:	590.2 kW
Array Type:	Fixed Tilt
Array Tilt:	10.0°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	11.2 ¢/kWh

Results			
Month	Solar Radiation (kWh/m ² /day)	AC Energy (kWh)	Energy Value (\$)
1	2.58	47330	5300.96
2	3.33	55889	6259.57
3	4.31	78055	8742.16
4	5.20	88910	9957.92
5	5.85	101544	11372.93
6	6.14	98838	11069.86
7	6.06	99845	11182.64
8	5.54	91756	10276.67
9	4.85	78894	8836.13
10	3.76	64421	7215.15
11	2.65	45137	5055.34
12	2.23	39528	4427.14
Year	4.38	890147	99696.46

Output Hourly Performance Data

[About the Hourly Performance Data](#)

Output Results as Text

[Saving Text from a Browser](#)

Run [PVWATTS v.1](#) for another US location or an International location
Run [PVWATTS v.2](#) (US only)

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