LOCAL GOVERNMENT ENERGY AUDIT PROGRAM: ENERGY AUDIT REPORT

PREPARED FOR:

BURLINGTON COUNTY OFFICES & COURT FACILITY
49 RANCOCAS ROAD
MOUNT HOLLY, NJ 08060
ATTN: MS. MARY PAT ROBBIE
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DEPT. OF RESOURCE CONSERVATION

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TABLE OF CONTENTS

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I. EXECUTIVE SUMMARY

This report presents the findings of the energy audit conducted for:

Burlington County
Offices and Courts Facility
49 Rancocas Road
Mount Holly, NJ, 08060-1317

County Contact Person: Ms. Mary Pat Robbie
Facility Contact Person: Ms. Karen Smith

This audit is performed in connection with the New Jersey Clean Energy - Local Government Energy Audit Program. The energy audit is conducted to promote the mission of the office of Clean Energy, which is to use innovation and technology to solve energy and environmental problems in a way that improves the State's economy. This can be achieved through the wiser and more efficient use of energy.

The annual energy costs at this facility are as follows:

Electricity	$ 619,663
Natural Gas	$ 93,638
Total	$713,301

The potential annual energy cost savings for each energy conservation measure (ECM) and renewable energy measure (REM) are shown below in Table 1. Be aware that the ECM's and REM's are not additive because of the interrelation of some of the measures. This audit is consistent with an ASHRAE level 2 audit. The cost and savings for each measure is ± 20%. The evaluations are based on engineering estimations and industry standard calculation methods. More detailed analyses would require engineering simulation models, hard equipment specifications, and contractor bid pricing.

Table 1
Financial Summary Table

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST[A]**	**ANNUAL SAVINGS[B]**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
ECM #1	Steam Plant Upgrade	$217,000	$22,118	9.8	154.8%
ECM #2	Insulate Steam Piping and Steam Valves in Central Plant	$22,000	$2,428	9.1	164.9%
ECM #3	Install High Efficiency Water Cooled Centrifugal Chiller	$480,000	$30,509	15.7	58.9%
ECM #4	All-Variable-Speed Chilled Water Plant	$288,000	$29,620	9.7	54.3%
ECM #5	Replace Condensate Receivers/Pumps	$51,000	$4,695	10.9	38.1%
ECM #6	Install NEMA Premium® Efficient Motors	$26,751	$2,538	10.5	70.8%
ECM #7	New Higher Efficiency Pumps	$23,840	$5,240	4.5	339.6%
ECM #8	Direct Steam-Fired Domestic Hot Water Heater	$102,000	$2,799	36.4	-67.1%
ECM #9	Reducing Demand Charges	$20,000	$1,488	13.4	11.6%
ECM #10	Lighting and Controls Upgrades	$28,655	$4,780	6.0	150.2%
ECM #11	Water Conservation Opportunities	$800	$45	17.8	-43.8%
Notes:	A. Cost takes into consideration applicable NJ Smart StartTM incentives.				
	B. Savings takes into consideration applicable maintenance savings.				

The estimated demand and energy savings for each ECM and REM is shown below in Table 2. The descriptions in this table correspond to the ECM's and REM's listed in Table 1.

Table 2
Estimated Energy Savings Summary Table

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	DESCRIPTION	ANNUAL UTILITY REDUCTION		
		ELECTRIC DEMAND (KW)	ELECTRIC CONSUMPTION (KWH)	NATURAL GAS (THERMS)
ECM #1	Steam Plant Upgrade	0.0	0.0	20,671.0
ECM #2	Insulate Steam Piping and Steam Valves in Central Plant	0.0	0.0	2,269.0
ECM #3	Install High Efficiency Water Cooled Centrifugal Chiller	0.0	252,144.0	0.0
ECM #4	All-Variable-Speed Chilled Water Plant	0.0	244,800.0	0.0
ECM #5	Replace Condensate Receivers/Pumps	0.0	646.0	0.0
ECM #6	Install NEMA Premium® Efficient Motors	7.9	20,955.0	0.0
ECM #7	New Higher Efficiency Pumps	0.0	44,800.0	0.0
ECM #8	Direct Steam-Fired Domestic Hot Water Heater	0.0	0.0	2,616.0
ECM #9	Reducing Demand Charges	55.0	5,500.0	0.0
ECM #10	Lighting and Controls Upgrades	12.6	39,505.0	0.0
ECM #11	Water Conservation Opportunities	0.0	0.0	24.0

Concord Engineering Group (CEG) recommends proceeding with the implementation of all ECM's that provide a calculated simple payback at or under ten (10) years. The following Energy Conservation Measures are recommended for the facility:

- **ECM #1:** Steam Plant Upgrade
- **ECM #2:** Insulate Steam Piping and Steam Valves
- **ECM #4:** Variable Speed Chilled Water Plant
- **ECM #7:** New Higher Efficiency Pumps
- **ECM #10:** Lighting and Controls Upgrade

In addition to the ECMs, there are maintenance and operational measures that can provide significant energy savings and provide immediate benefit. The ECMs listed above represent investments that can be made to the facility which are justified by the savings seen overtime. However, the maintenance items and small operational improvements below are typically achievable with on site staff or maintenance contractors and in turn have the potential to provide substantial operational savings compared to the costs associated. The following are recommendations which should be considered a priority in achieving an energy efficient building:

1. Chemically clean the condenser and evaporator coils periodically to optimize efficiency. Poorly maintained heat transfer surfaces can reduce efficiency 5-10%.
2. Maintain all weather stripping on entrance doors.
3. Clean all light fixtures to maximize light output.
4. Provide more frequent air filter changes to decrease overall system power usage and maintain better IAQ.
5. Instruct operators to stagger large motor start-ups (10-HP to 50-HP). Typically, a motor requires six times as much electricity during start-up as it does to continue running. It usually takes a motor less than five seconds to start, accelerate and reach operating speed. By starting large motors as far apart as possible, the building owner can spread demand over a wide period. Total energy consumption will be the same, but the peak demand will be lower thus averting expensive summer demand charges.

II. INTRODUCTION

The comprehensive energy audit covers the 225,400 GSF Burlington County Offices/Courts Facility which includes county offices, county sheriff, administration, courtrooms, meeting rooms, and a cafeteria. The Burlington County Offices and Courts Facility is heated and cooled by a central plant located in the basement of both buildings. Therefore, since both facilities share most of the major HVAC equipment, they will be treated in this report as one building.

Electrical and natural gas utility information is collected and analyzed for one full year's energy use of the building. The utility information allows for analysis of the building's operational characteristics; calculate energy benchmarks for comparison to industry averages, estimated savings potential, and baseline usage/cost to monitor the effectiveness of implemented measures. A computer spreadsheet is used to calculate benchmarks and to graph utility information (see the utility profiles in Section IV). The Energy Use Index (EUI) is established for the building. Energy Use Index (EUI) is expressed in British Thermal Units/square foot/year (BTU/ft^2/yr), which is used to compare energy consumption to similar building types or to track consumption from year to year in the same building. The EUI is calculated by converting the annual consumption of all energy sources to BTU's and dividing by the area (gross square footage) of the building. Blueprints (where available) are utilized to verify the gross area of the facility. The EUI is a good indicator of the relative potential for energy savings. A low EUI indicates less potential for energy savings, while a high EUI indicates poor building performance therefore a high potential for energy savings.

Existing building architectural and engineering drawings (where available) are utilized for additional background information. The building envelope, lighting systems, HVAC equipment, and controls information gathered from building drawings allow for a more accurate and detailed review of the building. The information is compared to the energy usage profiles developed from utility data. Through the review of the architectural and engineering drawings a building profile can be defined that documents building age, type, usage, major energy consuming equipment or systems, etc.

The preliminary audit information is gathered in preparation for the site survey. The site survey provides critical information in deciphering where energy is spent and opportunities exist within a facility. The entire site is surveyed to inventory the following to gain an understanding of how each facility operates:

- Building envelope (roof, windows, etc.)
- Heating, ventilation, and air conditioning equipment (HVAC)
- Lighting systems and controls

The building site visit is performed to survey all major building components and systems. The site visit includes detailed inspection of energy consuming components. Summary of building occupancy schedules, operating and maintenance practices, and energy management programs provided by the building manager are collected along with the system and components to determine a more accurate impact on energy consumption.

III. METHOD OF ANALYSIS

Post site visit work includes evaluation of the information gathered, researching possible conservation opportunities, organizing the audit into a comprehensive report, and making recommendations on HVAC, lighting and building envelope improvements. Data collected is processed using energy engineering calculations to anticipate energy usage for each of the proposed energy conservation measures (ECMs). The actual building's energy usage is entered directly from the utility bills provided by the owner. The anticipated energy usage is compared to the historical data to determine energy savings for the proposed ECMs.

It is pertinent to note, that the savings noted in this report are not additive. The savings for each recommendation is calculated as standalone energy conservation measures. Implementation of more than one ECM may in some cases affect the savings of each ECM. The savings may in some cases be relatively higher if an individual ECM is implemented in lieu of multiple recommended ECMs. For example implementing reduced operating schedules for inefficient lighting will result in a greater relative savings. Implementing reduced operating schedules for newly installed efficient lighting will result in a lower relative savings, because there is less energy to be saved. If multiple ECM's are recommended to be implemented, the combined savings is calculated and identified appropriately.

ECMs are determined by identifying the building's unique properties and deciphering the most beneficial energy saving measures available that meet the specific needs of the facility. The building construction type, function, operational schedule, existing conditions, and foreseen future plans are critical in the evaluation and final recommendations. Energy savings are calculated base on industry standard methods and engineering estimations. Energy consumption is calculated based on manufacturer's cataloged information when new equipment is proposed.

Cost savings are calculated based on the actual historical energy costs for the facility. Installation costs include labor and equipment costs to estimate the full up-front investment required to implement a change. Costs are derived from Means Cost Data, industry publications, and local contractors and equipment suppliers. The NJ Smart Start Building® program incentives savings (where applicable) are included for the appropriate ECM's and subtracted from the installed cost. Maintenance savings are calculated where applicable and added to the energy savings for each ECM. The life-time for each ECM is estimated based on the typical life of the equipment being replaced or altered. The costs and savings are applied and a simple payback, simple lifetime savings, and simple return on investment are calculated. See below for calculation methods:

ECM Calculation Equations:

$$Simple\ Payback = \left(\frac{Net\ Cost}{Yearly\ Savings} \right)$$

$$Simple\ Lifetime\ Savings = \left(Yearly\ Savings \times ECM\ Lifetime \right)$$

$$Simple\ Lifetime\ ROI = \frac{(Simple\ Lifetime\ Savings - Net\ Cost)}{Net\ Cost}$$

$$Lifetime\ Ma\,\mathrm{int}\,enance\ Savings = \left(Yearly\ Ma\,\mathrm{int}\,enance\ Savings \times ECM\ Lifetime \right)$$

$$Internal\ Rate\ of\ \mathrm{Re}\,turn = \sum_{n=0}^{N} \left(\frac{Cash\ Flow\ of\ Period}{(1 + IRR)^n} \right)$$

$$Net\ \mathrm{Pr}\,esent\ Value = \sum_{n=0}^{N} \left(\frac{Cash\ Flow\ of\ Period}{(1 + DR)^n} \right)$$

Net Present Value calculations based on Interest Rate of 3%.

IV. HISTORIC ENERGY CONSUMPTION/COST

A. Energy Usage / Tariffs

The Burlington County Offices and Courts Facility is heated and cooled by a central plant located in the basement of both buildings. Therefore, since both facilities share most of the major HVAC equipment, they will be treated in this report as one building.

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.

Public Service Electric and Gas Company (PSE&G) transports electricity to the facility under the Large Power and Lighting Service (LPLS) Electric Rate. Hess Electric is the third party provider for the generation portion of the electric bill as of August 2010.

Currently, Burlington County is taking advantage of the New Jersey Energy Choice program and is utilizing Great Eastern Energy as their natural gas supplier. PSE&G still provides the transportation service to the facility under their Large Volume Gas (LVG) – Transport Service rate.

Description	Average
Electricity	12.1¢ / kWh
Natural Gas	$1.07 / Therm

Table 3
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: PSE&G
Rate: LPLP
Meter No: 578003268
Account No: 4200807718
Third Party Utility HESS
TPS Meter / Acct No:

MONTH OF USE	CONSUMPTION KWH	DEMAND	TOTAL BILL
Aug-09	825,431	1649.3	$91,249
Sep-09	823,508	1622.4	$96,258
Oct-09	652,628	1300.0	$65,150
Nov-09	529,677	1169.3	$58,243
Dec-09	511,263	1200.0	$56,241
Jan-10	568,190	988.8	$75,495
Feb-10	501,589	986.9	$63,659
Mar-10	515,831	973.4	$62,534
Apr-10	573,181	1392.0	$62,484
May-10	597,832	1441.9	$66,341
Jun-10	730,190	1626.2	$100,889
Jul-10	850,637	1547.5	$130,952
Totals	**7,679,957**	**1649.3 Max**	**$929,495**

AVERAGE DEMAND **1324.8 KW average**

AVERAGE RATE **$0.121** **$/kWh**

Figure 1
Electricity Usage Profile

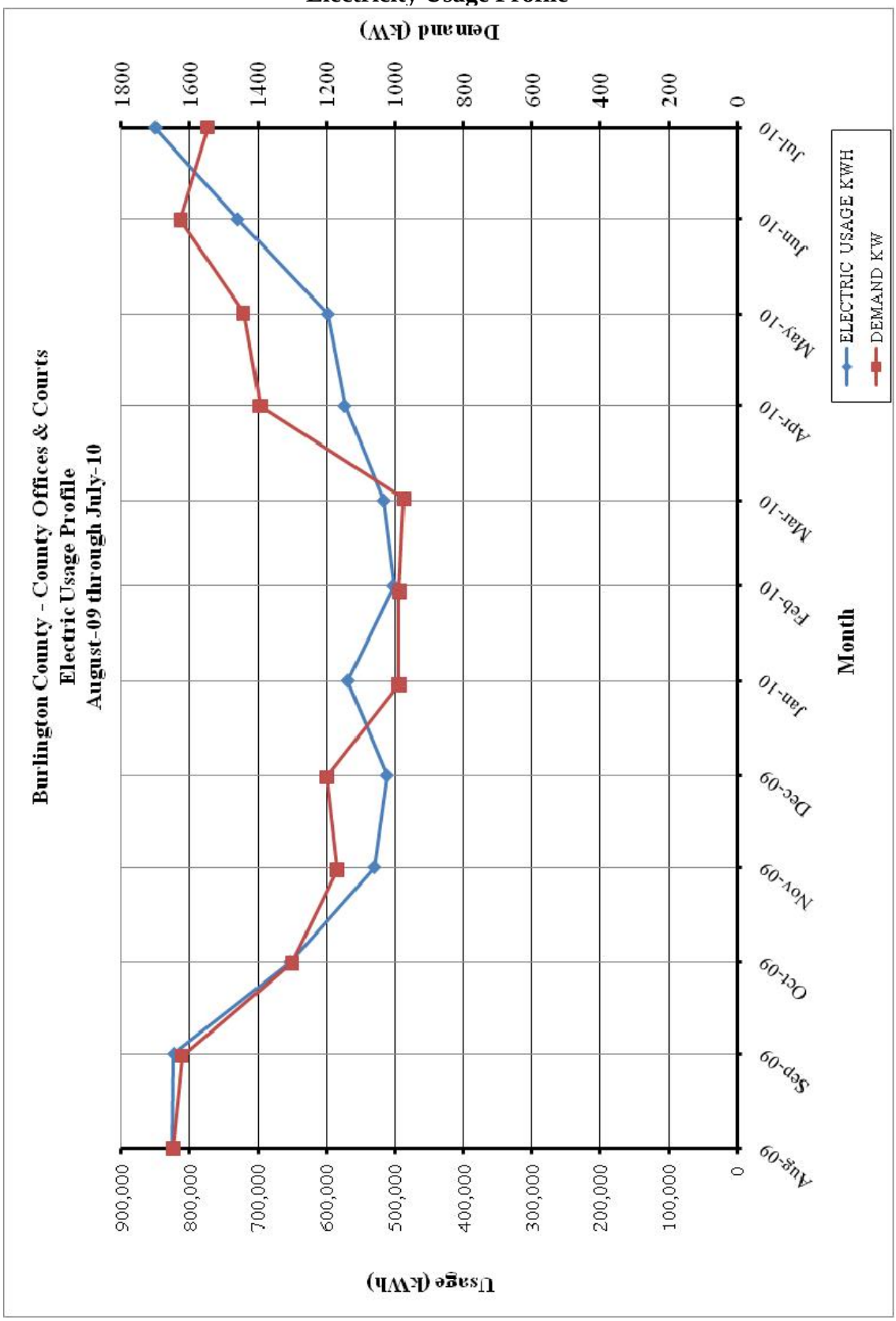
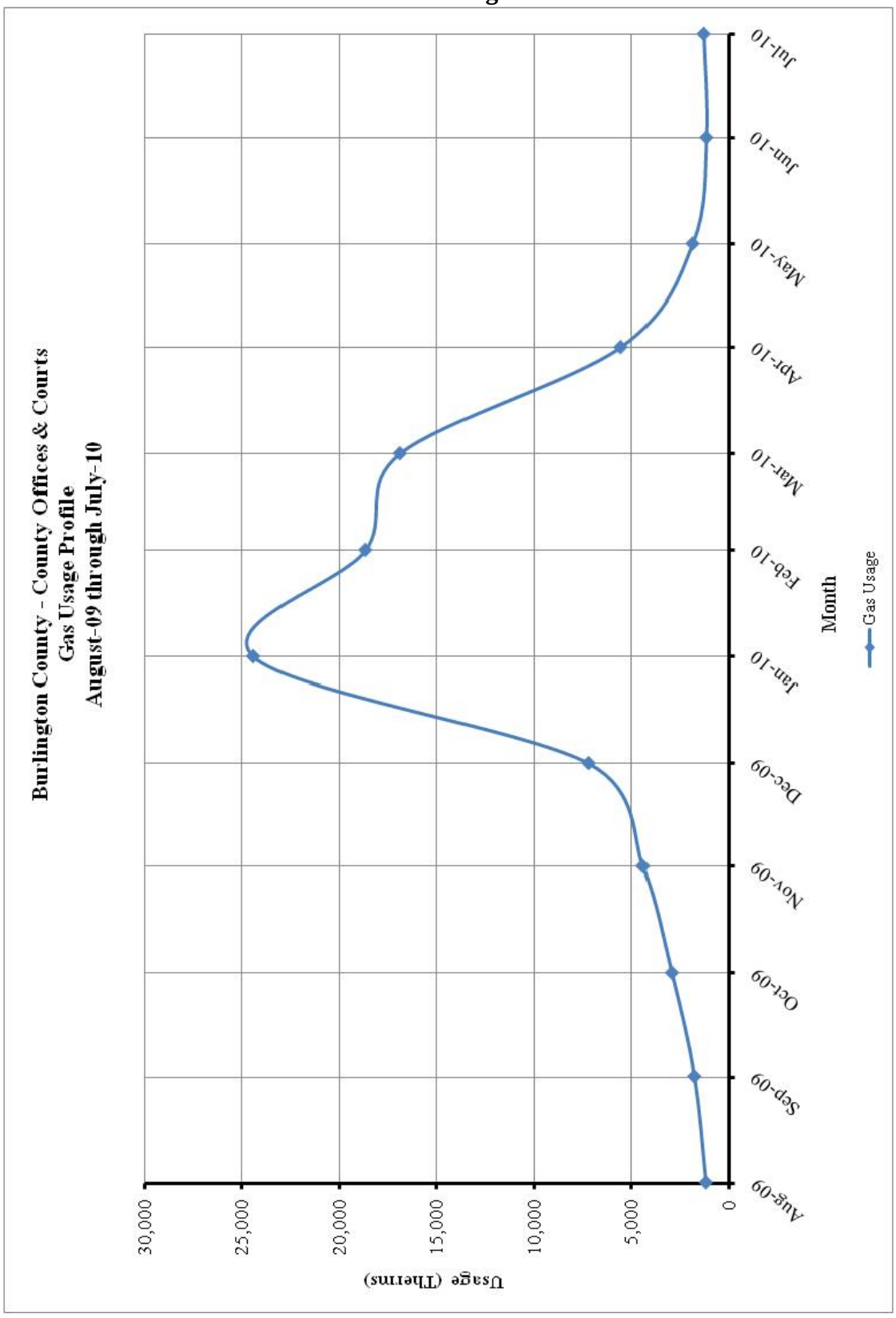


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider:	PSE&G	
Rate:	GSG / LVG	
Meter No:	2600315 / 2371033	
Point of Delivery ID:	PG000009188423940468	
Third Party Utility Provider:	Great Eastern Energy	
TPS Meter No:		
MONTH OF USE	**CONSUMPTION (THERMS)**	**TOTAL BILL**
Aug-09	1,212.27	$960.69
Sep-09	1,805.03	$1,267.09
Oct-09	2,956.65	$1,981.30
Nov-09	4,430.79	$5,972.83
Dec-09	7,201.17	$8,640.21
Jan-10	24,406.45	$25,720.56
Feb-10	18,670.53	$21,704.11
Mar-10	16,887.98	$18,863.22
Apr-10	5,562.68	$4,524.60
May-10	1,892.61	$1,560.35
Jun-10	1,183.32	$1,068.66
Jul-10	1,324.63	$1,374.28
TOTALS	**87,534.10**	**$93,637.90**
AVERAGE RATE:	**$1.07**	**$/THERM**

Figure 2
Natural Gas Usage Profile



B. Energy Use Index (EUI)

Energy Use Index (EUI) is a measure of a building's annual energy utilization per square foot of building. This calculation is completed by converting all utility usage consumed by a building for one year, to British Thermal Units (BTU) and dividing this number by the building square footage. EUI is a good measure of a building's energy use and is utilized regularly for comparison of energy performance for similar building types. The Oak Ridge National Laboratory (ORNL) Buildings Technology Center under a contract with the U.S. Department of Energy maintains a Benchmarking Building Energy Performance Program. The ORNL website determines how a building's energy use compares with similar facilities throughout the U.S. and in a specific region or state.

Source use differs from site usage when comparing a building's energy consumption with the national average. Site energy use is the energy consumed by the building at the building site only. Source energy use includes the site energy use as well as all of the losses to create and distribute the energy to the building. Source energy represents the total amount of raw fuel that is required to operate the building. It incorporates all transmission, delivery, and production losses, which allows for a complete assessment of energy efficiency in a building. The type of utility purchased has a substantial impact on the source energy use of a building. The EPA has determined that source energy is the most comparable unit for evaluation purposes and overall global impact. Both the site and source EUI ratings for the building are provided to understand and compare the differences in energy use.

The site and source EUI for this facility is calculated as follows:

$$Building\ Site\ EUI = \frac{(Electric\ Usage\ in\ kBtu + Gas\ Usage\ in\ kBtu)}{Building\ Square\ Footage}$$

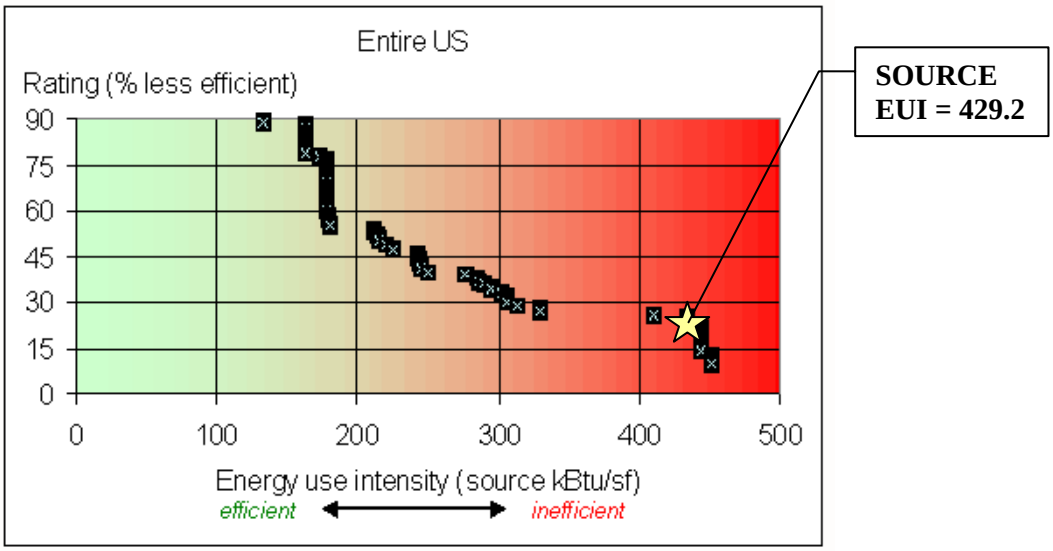
$$Building\ Source\ EUI = \frac{(Electric\ Usage\ in\ kBtu\ X\ SS\ Ratio + Gas\ Usage\ in\ kBtu\ X\ SS\ Ratio)}{Building\ Square\ Footage}$$

Table 5
Facility Energy Use Index (EUI) Calculation

ENERGY USE INTENSITY CALCULATION						
ENERGY TYPE	**BUILDING USE**			**SITE ENERGY**	**SITE-SOURCE RATIO**	**SOURCE ENERGY**
	kWh	**Therms**	**Gallons**	**kBtu**		**kBtu**
ELECTRIC	7,679,957.0			26,219,373	3.340	87,572,706
NATURAL GAS		87,534.1		8,753,410	1.047	9,164,820
FUEL OIL			0.0	0	1.010	0
PROPANE			0.0	0	1.010	0
TOTAL				34,972,783		96,737,526
*Site - Source Ratio data is provided by the Energy Star Performance Rating Methodology for Incorporating Source Energy Use document issued Dec 2007.						
BUILDING AREA		225,400	SQUARE FEET			
BUILDING SITE EUI		*155.16*	kBtu/SF/YR			
BUILDING SOURCE EUI		*429.18*	kBtu/SF/YR			

Figure 3 below depicts a national EUI grading for the source use of *Public Order and Safety Buildings*.

Figure 3
Source Energy Use Intensity Distributions: Public Order Buildings



C. EPA Energy Benchmarking System

The United States Environmental Protection Agency (EPA) in an effort to promote energy management has created a system for benchmarking energy use amongst various end users. The benchmarking tool utilized for this analysis is entitled Portfolio Manager. The Portfolio Manager tool allows tracking and assessment of energy consumption via the template forms located on the ENERGY STAR website (www.energystar.gov). The importance of benchmarking for local government municipalities is becoming more important as utility costs continue to increase and emphasis is being placed on carbon reduction, greenhouse gas emissions and other environmental impacts.

Based on information gathered from the ENERGY STAR website, Government agencies spend more than $10 billion a year on energy to provide public services and meet constituent needs. Furthermore, energy use in commercial buildings and industrial facilities is responsible for more than 50 percent of U.S. carbon dioxide emissions. It is vital that local government municipalities assess facility energy usage, benchmark energy usage utilizing Portfolio Manager, set priorities and goals to lessen energy usage and move forward with priorities and goals.

In accordance with the Local Government Energy Audit Program, CEG has created an ENERGY STAR account for the municipality to access and monitoring the facility's yearly energy usage as it compares to facilities of similar type. The login page for the account can be accessed at the following web address; the username and password are also listed below:

https://www.energystar.gov/istar/pmpam/index.cfm?fuseaction=login.login

User Name: Burlingtontwp
Password: lgeaceg2010

Security Question: What city were you born in?
Security Answer: burlington

The utility bills and other information gathered during the energy audit process are entered into the Portfolio Manager. The following is a summary of the results for the facility:

Table 6
ENERGY STAR Performance Rating

ENERGY STAR PERFORMANCE RATING		
FACILITY DESCRIPTION	**ENERGY PERFORMANCE RATING**	**NATIONAL AVERAGE**
Offices & Courts	N/A	N/A

An Energy Performance Rating cannot be established for the Campus or individual buildings. The Energy Star program does not have enough bin data available to calculate a campus wide

Energy Performance Rating at this time. Also, individual building ratings cannot be established due to the design of the Campus wide electric and gas distribution system. One year of utility data must be entered for each building or facility, since reliable building energy meters do not exist, this approach cannot be taken.

V. FACILITY DESCRIPTION

The Burlington County Offices and Courts Facility is heated and cooled by a central plant located in the basement of both buildings. Therefore, since both facilities share most of the major HVAC equipment, they will be treated in this report as one building. The administration office portion consists of a 4-story facility with a basement and a penthouse mechanical room. Exterior walls are sinter block construction/brick with minimum insulation and stone façade. The amount of insulation within the walls could not be verified. The windows throughout the facility are in fair condition, appear to be well maintained but are not insulated. Typical windows throughout the Courts Facility are double pane, ¼" tinted glass with insulated, operable aluminum frames. Blinds are utilized through the facility for occupant comfort. The blinds are valuable because they help to reduce heat loss in the winter and reduce solar heat gain in the summer. The roof of this building is constructed of a built-up roof with rubber membrane and light color stone covering, where the rooftop HVAC equipment is located. The amount of insulation below the roofing is unknown. The County Office Building was built in 1957 and the Courts Facility Addition in 1981 with neither building having any additions since the original construction.

The Burlington County Offices are occupied by 279 employees for approximately 85 hours per week while the Court Facility portion of the facility is occupied by 415 employees for approximately 45 hours per week.

HVAC Systems

The cooling for this facility is achieved via two (2) electric-driven centrifugal chillers made by Trane. The Trane chillers are nominal 450-Ton CVHA-044G CenTraVac® units from 1979. The units are water-cooled, 2-compressor chillers using R123 refrigerant. Load control of each of these chillers is achieved via staging of the two compressors. The cooling towers for each of these units are BAC Model 2415C, 2-cell units each rated at 1,150 GPM. The cooling tower fans are controlled by variable speed drives. The condenser water pumps are 40 HP each and the chilled water is pumped to various chilled water coils by several 50 HP pumps. A standby pump is used for either chilled water or condenser water.

The heating for the facility is achieved via three (3) Burnham steam boilers two of which are rated at 165 BHP with an output of 5,706 lbs/hr of steam and the third steam boiler rated at 135 BHP with an output of 4,660 lbs/hr of steam. The boilers feed several steam-to-hot water converters and a steam heat exchanger in an 860-gallon domestic hot water tank along with steam preheat coils in numerous central air handling units in the County Office Building. The hot water from the converters is pumped to hot water coils in the air handling units, fan coil units, VAV boxes, etc. throughout the Offices/Court Facility. Perimeter heating is achieved via fin-tube perimeter baseboard heaters. The Court Facility portion is totally hot water with hot water heating, hot water reheat, and domestic hot water. The County Office Building uses hot water for heating hot water coils in the air handlers and direct steam for pre-heating cold outside air in the winter and steam reheating in the summer for humidity control on the fourth floor court spaces.

The hot water for both portions of the building is pumped to the hot water coils via five (5) pumps ranging in size from 5 to 25 HP. One standby pump is used for the fan coil units for either chilled water or hot water. The Courts Building includes terminal variable air volume (VAV) boxes for zoning. VAV boxes are equipped with direct digital controls (DDC) through the central energy management system. Local thermostats can override each VAV box's airflow to regulate space temperature. Conditioned air is distributed to the offices through ductwork to ceiling and sidewall diffusers.

Entrance doorways are heated via cabinet style hot water unit ventilators. Mechanical rooms, storage rooms, etc. are heated via hot water unit heaters while electrical rooms use electric unit heaters.

Exhaust System

Air is exhausted from the toilet rooms, common areas, etc. by rooftop units.

HVAC System Controls

The HVAC systems within the facility are controlled via a central, Direct Digital Control (DDC), Building Management System (BMS) made by Trane. The building management system currently controls some of the HVAC systems. The chillers CH-1 & CH-2, AHU-1 & 1A, AHU-2 & 2A, AC-5 thru AC-8, HV-2-1 thru HV-2-3, computer room units AC-1 thru AC-3, fan coil units on the 4th thru 6th floors in the Court Facility, and the VAV boxes on the 4th thru 6th floor in the Court Facility are presently monitored and controlled through the system. The system has full access and override capability over the FCUs and VAV boxes and corresponding zone temperatures. Hot water supply temperature of the heating hot water supply loop is re-set manually by the boiler operators based on outside air temperature. The boilers are started and stopped manually by the boiler operators. The boiler operator checks the weather and decides to keep the boilers and pumps running based on the outside air temperature. The chillers are set at 45°F leaving water temperature throughout the entire cooling season with no temperature reset based on outdoor air temperature.

Domestic Hot Water

Domestic hot water for the cafeteria kitchen, restrooms, office lounge, etc. is provided by an 860-gallon storage tank and a circulating pump. The tank is feed steam through a shell and tube heat exchanger.

Lighting

The lighting systems in both buildings are up-to-date and efficient. Typical lighting throughout this facility is fluorescent light fixtures with T-8 lamps and electronic ballasts. There are several areas where the T-12 lighting system could be upgraded to T-8 technology and occupancy sensors can be installed in several offices. In addition, there are numerous exit signs with 7-Watt compact fluorescent lamps that should be replaced with LED units.

VI. 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.

VII. ENERGY CONSERVATION MEASURES

ECM #1: Steam Plant Upgrade

Description:

Heating is provided to the Offices/Courts Facility by three (3), 3-pass, Burnham wetback, steam boilers. Two of the three boilers are 165 BHP with a rated output capacity of 5,537 MBH and 5,706 lbs/hr of steam with an estimated combustion efficiency of 60% in their existing condition. The third boiler is rated at 135 BHP with an output of 4,520 MBH and 4,660 lbs/hr of steam. The boilers are over 35 years old and the 135 BHP unit is in need of major repairs before it can be insured by the carrier. Since the units have surpassed their expected useful service life of twenty-five (25) years per ASHRAE standards, substantial energy savings will be realized through the replacement of the 135 BHP steam boiler that requires major/costly repairs. Based on discussions with the facility operating personnel, the 5,706 lbs/hr steam boiler along with the smaller 4,660 lbs/hr unit have more than enough capacity to heat the facility during the coldest winter months.

Presently, the hot water loop is set manually for 180°F for the coldest months of the winter and reduced manually when the outdoor temperature rises. The temperature of the hot water supplied to a building's heating system can be varied, with the warmest water supplied only on the coldest days. This is achieved by resetting the hot water temperature setpoints in the control system. This is normally done as a function of outside air temperature, and is often programmed into the Building Management System (BMS) software or can be controlled by a separate hardware controller.

One of the most innovative combustion technologies currently available in the market is the gas-fired pulse-combustion boiler. When combined with other high-performance elements for heat transfer, the overall efficiency of these heating systems can attain 90%. In a modular heating plant, one boiler is first operated to meet small heating loads. Then, as the load increases, additional boilers are fired and enter on-line to gradually increase the capacity of the heating system. Similarly, as the load decreases, the boilers are taken off-line one by one.

CEG recommends replacing the 135-BHP steam boiler with equivalent gas-fired, modular, condensing boiler units (4,500 MBH). The two (2) remaining boilers can be utilized as backup for this proposed new gas-fired, modular boiler subsystem. An outside temperature reset controller programmed into the Trane Summit system will be installed to automatically regulate the hot water loop temperature for the steam-to-hot water subsystem based on outside air temperature. In addition, the 860-gallon large insulated storage tank with a low pressure steam coil that generates the re-circulated domestic hot water should be replaced with a high-efficiency, gas-fired, modular hot water heater with the required storage capacity.

Concord Engineering Group strongly recommends that an in-depth feasibility study be undertaken by Burlington County to ascertain the possibility of eliminated most or all of the steam boilers and using more efficient, less costly, gas-fired modular boilers for heating and domestic hot water requirements.

Energy Savings Calculations:

Annual gas consumption data for the boiler plant is gathered in order to calculate the estimated heat output of the existing boilers.

Month of Use	Total Gas Consumption, Therms
Aug-09	1,212
Sep-09	1,805
Oct-09	2,957
Nov-09	4,259
Dec-09	7,034
Jan-10	24,244
Feb-10	18,532
Mar-10	16,730
Apr-10	5,385
May-10	1,757
June-10	1,038
Jul-10	1,174
TOTALS	**86,128**

The annual gas consumption is used in a reverse calculation in the below equations to obtain proposed annual gas consumption based on improved efficiency. Calculations are summarized in a table below.

Gas Used by Existing Boilers (therms) x Existing Boiler Efficiency = Boiler Output (therms)

Gas Used by Existing Boilers (therms) x New Modular Boiler Efficiency = New Modular Boiler Output (therms)

Month of Use	Gas used by the Boilers, Therms	Existing Boilers - Output at 60% Efficiency (Therms)	Modular Boilers - Output at Efficiency = 90% (Therms)	Energy Savings, Therms	Cost Savings @ $1.07/Therm
Aug-09	1,212	727	1,018	291	$311.37
Sep-09	1,805	1,084	1,516	432	462.24
Oct-09	2,957	1,774	2,484	710	759.70
Nov-09	4,259	2,555	3,578	1,023	1,094.61

Dec-09	7,034	4,221	5,909	1,688	1,806.16
Jan-10	24,244	14,546	20,365	5,819	6,226.33
Feb-10	18,532	11,119	15,566	4,447	4,758.29
Mar-10	16,730	10,038	14,053	4,015	4,296.05
Apr-10	5,385	3,232	4,523	1,291	1,381.37
May-10	1,757	1,054	1,476	422	451.54
June-10	1,038	623	872	249	266.43
Jul-10	1,174	704	986	282	301.74
TOTALS	**86,128**	**51,677**	**72,348**	**20,671**	**$22,118**

The total installed cost of new, high-efficiency gas-fired modular boilers for heating and domestic hot water (including demolition and removal of existing equipment) and O/A temperature reset for the steam-to-hot water subsystem including interfacing with the Trane Summit system is $217,000. (Pricing estimate includes the cost of engineering, permitting, commissioning, and a small contingency)

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$217,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$217,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$22,118
Total Yearly Savings ($/Yr):	$22,118
Estimated ECM Lifetime (Yr):	25
Simple Payback	9.8
Simple Lifetime ROI	154.8%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$552,950
Internal Rate of Return (IRR)	9%
Net Present Value (NPV)	$168,144.00

Note: If this ECM is implemented, ECM #2 and #5 will be reduced in scope and ECM #8 would be eliminated.

ECM #2: Insulate Steam Piping and Steam Valves in Central Plant

Description:

The central steam plant supplies 5-10 PSIG steam to numerous steam-to-hot water converters and air handling units, fan coil units, duct coils for preheat and reheat, etc. During several site inspections, sections of steam/condensate piping and numerous steam valves were observed to be un-insulated allowing significant amounts of heat transfer from the hot steam piping/valves to the surrounding space. The high temperature of the steam piping (180ºF to 220ºF) causes more heat transfer to occur between these un-insulated surfaces and the surrounding space resulting in excess fuel usage at the central steam plant.

This ECM will insulate all bare steam/condensate piping in the central steam plant and install removable, reusable, thermal insulation blankets on all exposed steam valves.

Energy Savings Calculations:

Q = K (Delta T) / L + (K/Ht)
Q = Heat Loss (BTU/Hr. / Sq. Ft.)
K = Thermal Conductivity (25)
L = Insulation Thickness
Delta T = Surface Temp – Ambient Temp
Ht = Combined Coefficients (3.2) for Radiation, Convection & Conduction

Natural Gas Savings = (Q x Sq. Ft. x Operating Hours x $/Therm) / (100,000 BTU/Therm)

See **Appendix H** for detailed energy savings calculation which shows a total fuel savings of $2,428 per year. The estimated installed cost of the steam valve blankets and steam/condensate piping insulation is approximately $22,000 as obtained from Insultech.

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$22,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$22,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$2,428
Total Yearly Savings ($/Yr):	$2,428
Estimated ECM Lifetime (Yr):	15
Simple Payback	9.1
Simple Lifetime ROI	65.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$36,420
Internal Rate of Return (IRR)	7%
Net Present Value (NPV)	$6,985.31

ECM #3: Install High-Efficiency Water-Cooled Centrifugal Chiller

Description:

The Burlington County Administration Offices/Courts Facility cooling is achieved via two (2) water-cooled Trane centrifugal chillers. The chillers are approximately 31 years old and in poor condition. The efficiency of a chiller is rated on the energy used per ton of refrigeration i.e., kilowatts per ton. Older chillers are less energy efficient than newer chillers. Chillers installed prior to 1980 are generally operating at 0.80 to 0.95 kW/ton. Newer chillers commonly have an efficiency of 0.55 to 0.65 kW/ton. Due to the age and condition of the existing chillers, the efficiency is estimated to be 0.95 kW/ton at full load capacity. In order to qualify for a New Jersey SmartStart Buildings incentive, this new chiller would need to have a minimum full load efficiency of 0.47 kW/ton.

CEG recommends replacing one of the two (2) units with a Trane model CVHF0485 high-efficiency centrifugal water-cooled chiller model CVHF0485, with variable speed drive. The ECM would require extensive demolition work to remove one of the two (2) existing chillers through the airway.

Energy Savings Calculations:

Existing Chiller #1

Existing Efficiency	IPLV = 0.950 kW/Ton
Current Capacity of Chiller	450 Tons

Proposed System
New Water-Cooled Centrifugal Chiller with Variable Speed Compressor

New Chiller Efficiency	IPLV = 0.538 kW/Ton
Capacity	450 Tons

Energy Savings Calculations:

From the NJ Clean Energy Program – Protocols to Measure Resource Savings (12/09):

Energy Savings = Tons x EFLH x ($IPLV_b$ – $IPLV_q$)

Tons = Rated equipment cooling capacity = 450 tons
EFLH = Equivalent Full Load Hours = 1,360 Hours
$IPLV_b$ = IPLV of baseline equipment, kW/ton
$IPLV_q$ = IPLV of qualifying equipment, kW/ton

Energy Savings = 450 Tons x 1,360 Hours x (0.950 – 0.538) kW/Tons = 252,144 kWh
Energy Cost Savings = 252,144 kWh x $0.121/kWh = $30,509

Cost of Installation:

Installed cost of a new 450-ton centrifugal chiller with demolition, rigging, controls, electrical, etc. = $480,000 (Cost of unit from McQuay and installation cost by mechanical contractor).

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$480,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$480,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$30,509
Total Yearly Savings ($/Yr):	$30,509
Estimated ECM Lifetime (Yr):	15
Simple Payback	15.7
Simple Lifetime ROI	-4.7%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$457,635
Internal Rate of Return (IRR)	-1%
Net Present Value (NPV)	($115,785.54)

ECM #4: All-Variable-Speed Chilled Water Plant

Description:

The existing chilled water plant consists of a 450-ton centrifugal chillers (other is standby), two 50-hp constant-speed chilled water pumps, two 450-ton cooling towers (with fan VFDs), and two 40-hp constant-speed condenser pumps. The average annual efficiency for the total chilled water plant is estimated to be approximately 1.1 kW per ton. The kilowatts per ton take into account the energy use of the chillers, condenser pumps, chilled water pumps, and cooling tower fans.

This ECM would replace all three-way valves on the larger chilled water coils with two-way valves, retrofit the chilled water pumps feeding these coils with VFDs, and install demand-based control sequences into the existing Trane Summit BMS. Chiller-Tower Optimization is implemented in Trace Summit software using Custom Programming Language (CPL). Simple direct control algorithms will coordinate the operation of the chillers, pumps and tower fans on demand for cooling, which is determined by cooling-coil-valve position. The chilled water temperature and tower leaving water temperature is allowed to float within preset limits to allow all components of the chilled water system to operate at their highest efficiency at all times.

Energy Savings Calculations:

Measurement and verification data confirms that the energy efficiency of a chiller plant is improved most effectively by utilizing variable speed and optimizing the efficiency of the entire system in response to the requirements of the load served by the plant. Based on numerous chilled water plant designs and retrofits, we have found that total chilled water plant efficiencies of 0.6 to 0.7 kW per ton are attainable. Using this value, we have the following energy savings:

Energy Savings = Tons x EFLH x ($IPLV_b$ – $IPLV_q$)

Tons = Rated Chiller Plant Cooling Capacity
EFLH = Equivalent Full Load Hours (1,360 hours – per NJ Clean Energy Protocols page 66)
$IPLV_b$ = 1.1 kW per ton
$IPLV_q$ = 0.7 kW per ton

Energy Cost Savings = 450 Tons x 1,360 Hours (1.1 – 0.7) kW per ton
= 244,800 kWh x $0.121/kWh = $29,620

The estimated cost of the two-way valves, VFDs on the various pumps, electrical, and programming of the existing BMS is $288,000.

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$288,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$288,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$29,620
Total Yearly Savings ($/Yr):	$29,620
Estimated ECM Lifetime (Yr):	15
Simple Payback	9.7
Simple Lifetime ROI	54.3%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$444,300
Internal Rate of Return (IRR)	6%
Net Present Value (NPV)	$65,601.64

ECM #5: Replace Condensate Receivers/Pumps

Description:

Several condensate pump and receiver sets are in poor repair and leaking condensate from the receivers and pump seals. The lost condensate is a loss of water which is costly that includes a loss of 200^0 F water that does not return to the boiler feedwater tank. The make-up water has to be heated resulting in a loss of energy. The following condensate pump sets were designated for replacement: CP-1 and CP-2.

Energy Savings Calculations:

The losses of condensate were estimated and the energy required to heat the make-up water from 60^0F to 200^0F was calculated. See Condensate Pump Replacement Calculation Appendix for detailed energy cost savings and estimated equipment costs.

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$51,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$51,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$4,695
Total Yearly Savings ($/Yr):	$4,695
Estimated ECM Lifetime (Yr):	15
Simple Payback	10.9
Simple Lifetime ROI	38.1%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$70,425
Internal Rate of Return (IRR)	4%
Net Present Value (NPV)	$5,048.61

ECM #6: Install NEMA Premium® Efficient Motors

Description:

Some of the motors driving pumps and fans in this facility are NEMA premium efficiency motors. There are some pumps and fans utilizing standard or lower efficiency motors. Replacing these motors with NEMA premium efficiency motors will generate energy savings. The improved efficiency of the NEMA Premium® efficient motors is primarily due to better designs with use of better materials to reduce losses. Because many motors operate year round, even small increases in efficiency can yield substantial energy and dollar savings.

This energy conservation measure would replace the motors equal to or greater than 5 HP with NEMA Premium® Efficient Motors. NEMA Premium® is the most efficient motor designation in the marketplace today. The energy & cost savings were calculated for the fan/pump motors in this facility that are greater than or equal to 5 HP and have standard efficiency ratings.

Energy Savings Calculations:

For Example: 10 HP Supply Air Fan Motor with the following:

Existing Motor Efficiency = 84%
Annual Hours of Operations = 3000
1 HP = 0.746 Watt
Load Factor = 80%
Cost of electricity = $0.121/kWh

New NEMA Premium® Motor Efficiency = 91.7%

Existing 10 HP Motor Operating Cost

$$= \frac{Motor\ HP \times 0.746 \frac{kW}{HP} \times LoadFactor\ \times Hours\ of\ Operation \times Cost\ of\ Electric}{Motor\ Efficiency\ \times Power\ Factor}$$

$$= \frac{10 \times 0.746 \times 80\%\ \times 3000 \times \$0.121}{84\%\ \times 90\%} = \$2{,}866\ /Year$$

New NEMA Premium® Efficiency Motor Operating Cost =

$$= \frac{10\ \times 0.746 \times 80\%\ \times 3000 \times \$0.121}{91.7\%\ \times 90\%} = \$2{,}625\ /Year$$

Savings = $2,866 - $2,625 = $241/Year

Installed Cost of a 10 HP NEMA Premium® Efficiency Motor = $2,578 (including new v-belts and alignment) minus the SmartStart Building® incentive of $100 is $2,478.

Below is the summary energy savings:

Unit #	Motor HP	Standard Motor Efficiency %	Annual Consumption kWh	Premium Motor Efficiency %	Annual Consumption kWh	Annual Savings kWh	Demand Saving, kW
AHU-1	5	81.5%	12,204	89.5%	11,114	1,090	0.4
AHU-1A	10	84.0%	23,683	91.7%	21,694	1,989	0.7
AHU-2	5	81.5%	12,204	89.5%	11,114	1,090	0.4
AHU-2A	10	84.0%	23,683	91.7%	21,694	1,989	0.7
P-9	25	88.5%	42,147	93.6%	39,850	2,297	1.1
P-8	5	81.5%	12,204	89.5%	11,114	1,090	0.4
P-6	20	86.0%	33,718	93.0%	30,870	2,848	1.0
P-7	20	86.0%	33,718	93.0%	30,870	2,848	1.0
P-1	50	90.7%	74,204	94.5%	70,670	3,534	1.4
AC-2	5	81.0%	12,204	89.5%	11,114	1,090	0.4
AC-3	5	81.0%	12,204	89.5%	11,114	1,090	0.4
Total			**292,173**		**271,218**	**20,955**	

Below is the summary of cost savings and financial performance of this ECM.

Unit #	Energy Cost Savings	Equipment Cost	Total Cost	NJ SmartStart Incentives	Net Cost	Payback Term
AHU-1	$132	$450	$1,925	$54	$1,871	
AHU-1A	$241	$800	$2,578	$100	$2,478	
AHU-2	$132	$450	$1,925	$54	$1,871	
AHU-2A	$241	$800	$2,578	$100	$2,478	
P-9	$278	$1,125	$3,269	$130	$3,139	
P-8	$132	$450	$1,925	$54	$1,871	
P-6	$345	$970	$2,610	$113	$2,497	
P-7	$345	$970	$2,610	$113	$2,497	
P-1	$428	$1,550	$4,505	$198	$4,307	
AC-2	$132	$450	$1,925	$54	$1,871	
AC-3	$132	$450	$1,925	$54	$1,871	
Total	**$2,538**				**$26,751**	**10.5 yrs**

- Total cost includes labor, 10% engineering and design + 15% for retrofit work
- Savings calculations based on current operation schedule at constant speed

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$27,775
NJ Smart Start Equipment Incentive ($):	$1,024
Net Installation Cost ($):	$26,751
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$2,538
Total Yearly Savings ($/Yr):	$2,538
Estimated ECM Lifetime (Yr):	18
Simple Payback	10.5
Simple Lifetime ROI	70.8%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	$45,684
Internal Rate of Return (IRR)	6%
Net Present Value (NPV)	$8,155.42

ECM #7: New Higher Efficiency Pumps

Description:

The existing hot water and chilled water pumps in the central plant appear to be original building units that were installed in 1981. These pumps are leaking water thru the seals, shaft bearings are worn, and the estimated efficiency is 55% at all conditions from partial to full load.

This ECM would replace the following pumps with energy efficient units that average 75% efficiency from partial to full loading:

Pump Tag #	Flow (GPM)	Head (Feet)	Motor HP	Motor Efficiency
P-9	705	80	25	88.5%
P-8	200	50	5	81.5%
P-6	334	115	20	86%
P-7	334	115	20	86%
P-1	960	120	50	90.7%

Energy Savings Calculations:

See Pump Calculations Appendix for PumpSave 4.2 Energy Saving Calculator for Pumps.

Energy Savings Summary:

ECM #7 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$23,840
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$23,840
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$5,240
Total Yearly Savings ($/Yr):	$5,240
Estimated ECM Lifetime (Yr):	20
Simple Payback	4.5
Simple Lifetime ROI	339.6%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$104,800
Internal Rate of Return (IRR)	22%
Net Present Value (NPV)	$54,117.97

ECM #8: Direct Steam-Fired Domestic Hot Water Heater

Description:

The existing domestic hot water generation is located in the basement adjacent to the boiler room and consists of an 860-gallon large insulated storage tank with a low pressure steam coil that generate the re-circulated domestic hot water at approximately 140^0 F. The efficiency of the storage tank system is approximately 75%. Installing an instantaneous unit fed with 15 PSIG steam and sub-cooling is rated at 91% efficiency. The direct-fired unit has a much lower storage volume but the increased heating surface allows the reduction of steam volume since more heat is extracted from each pound of steam. The instantaneous system also requires considerably less space and is easily installed on a pre-packaged skid unit. It is proposed that two units at 40 GPM each be installed for the domestic hot water requirements.

Energy Savings Calculations:

The energy savings were calculated based on the improved efficiency of the instantaneous unit compared to the conventional storage tank, low pressure steam system currently used. The average gas usage for the months of June thru August was used since the largest load is the domestic hot water production for the summer months. See DHW Steam Cost Savings for Direct-Fired Unit Appendix for a detailed energy analysis.

The instantaneous steam-fired domestic hot water skids were priced by Aerco ($17,000 each) and the installation along with demolition of existing system, new piping, valves, safety devices, controls, etc. by a mechanical contractor. Total installed price with engineering fees, contingency, etc. is $102,000.

Energy Savings Summary:

ECM #8 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$102,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$102,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$2,799
Total Yearly Savings ($/Yr):	$2,799
Estimated ECM Lifetime (Yr):	12
Simple Payback	36.4
Simple Lifetime ROI	-67.1%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$33,588
Internal Rate of Return (IRR)	-14%
Net Present Value (NPV)	($74,138.74)

ECM #9: Reducing Demand Charges

Description:

The electric utility company is required to have electricity available to meet customer needs whenever they need it. In other words, the utility must be ready to provide electricity whenever customers "demand" it. Customers that have a high demand are charged a billing demand charge for this service. These additional charges typically account for about 25% of a utility bill especially during the summer (summer peak demand charges). Demand control allows the building owner to minimize these demand peaks and regulate power usage, reducing extra demand charges and lowering long-term energy costs.

This ECM would install a revenue-accurate intelligent energy meter on the main service entrance to the facility to measure usage across a series of 15-minute energy measurement windows. Energy usage is measured in kWh and instantaneous kW is averaged to obtain demand levels. With this information, a load shedding program that will be installed in the existing Trane Summit system will monitor this demand level and compare it to a set (programmed) maximum level. When demand levels approach the maximum usage limit, the Trane Summit system will automatically turn off non-critical systems using a preset matrix to determine which loads are disposable at the given time. When the usage level declines, the loads are automatically brought back on line. These actions are all handled by the software program installed in the Trane Summit system.

Energy Savings Calculations:

The total peak demand for the complex (including the County Office Bldg, Courts Facility and Detention Center) during the summer of 2010 was 1,649 kW. We have assumed that the County Office Bldg and Courts Facility are 2/3 of this or 1,100 kW. We recommend that Burlington County target a 5% kW reduction (55 kW) during on-peak hours for next summer by turning off lights, raising space temperatures in unoccupied spaces, and shutting down specific exhaust fans. In addition, there is a usage savings estimated to be 55 kW x 100 hours (hours during the summer above design temperatures) = 5,500 kWh.

From the PSE&G LPLP Rate, the following cost savings are calculated:

Distribution Charges: 55 kW x $9.03(Summer Demand Rate) + 5,500 kWh ($0.00712/kWh (On-Peak Rate) = $536

Supply Charges: 55 kW x $7.52 + 5,500 kWh ($0.0978/kWh) = $952

Total Cost Savings = $536 + $952 = $1,488

The cost of the smart meter, wiring, relays, electrical, Trane Summit programming, etc. is estimated to be $20,000.

Energy Savings Summary:

ECM #9 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$20,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$20,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$1,488
Total Yearly Savings ($/Yr):	$1,488
Estimated ECM Lifetime (Yr):	15
Simple Payback	13.4
Simple Lifetime ROI	11.6%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$22,320
Internal Rate of Return (IRR)	1%
Net Present Value (NPV)	($2,236.35)

ECM #10: Lighting and Lighting Control Upgrades

Description:

There are still a small amount of T-12 fixtures throughout the Offices/Courts Facility. Improved fluorescent lamps and ballasts are available as direct replacements for the existing lamps and ballasts. A simple retrofit of the existing fixture can provide substantial savings. For example, a conventional drop-ceiling lay in fixture with four, 4-foot lamps (34 Watt lamps with magnetic ballast) has a total wattage of 144 Watts per fixture. By using T-8 lamps and electronic ballasts, the total wattage would be reduced to 86 Watts. The light levels would increase by about 15% and the light quality would increase by 35%.

This ECM includes retrofitting each of the existing T-12 fluorescent lamp and magnetic ballast fixtures with T-8 lamps and high-power electronic ballasts. High efficiency electronic ballasts reduce overall wattage while maintaining the existing lumen levels of the various rooms. The replacement lamps are based on General Electric Super T8 lamps and the replacement ballast is GE-432-MAX-N/Ultra Instant Start Low Power Ballast or equivalent.

A common occurrence in many facilities is lighting fixtures being left on unnecessarily. There has been a belief that it is better to keep the lights on rather than to continuously switch them on and off. The on/off dilemma was studied and it was determined that the best option is to turn the lights off whenever possible. Although this practice reduces the lamp life, the energy savings far outweigh the lamp replacement costs. To better control lighting according to occupancy and reduce lighting energy consumption,

CEG recommends installing occupancy sensors. Private offices, file rooms, lounges, kitchens, conference rooms, etc. are good candidates for wall-mounted or ceiling mounted occupancy sensors. Dual technology sensors (ultrasonic and infrared) detect human motion and presence to ensure proper activation of lights. The basis of calculation is the SensorSwitch Model WSD wall switch and the Model CM ceiling mount or equivalent.

The third part of this ECM is replacing some of the existing exit signs that have 7-Watt Compact Fluorescent Lamps (CFLs) with the newer LED technology units.

Energy Savings Calculations:

Refer to the **Investment Grade Lighting Audit Appendix** for detailed energy savings calculations for retrofit of T-12 fixtures to T-8 lamps/electronic ballasts, LED exit signs, and dual technology occupancy sensors.

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

- Dual Technology Occupancy Sensor - Switch Mount $75 per installation
- Dual Technology Occupancy Sensor - Remote Mount $160 per installation

Cost includes material and labor.

NJ Smart Start® Program Incentive Calculations:

From the **Smart Start Incentive Appendix**, the following incentives are warranted:

For the LED Exit Sign: $20/LED Exit sign (≤75kW facility connected load) and $10/LED Exit sign (≥75kW facility connected load).
Smart Start ® Incentive = (# of LED Exit fixtures x $10 per fixture)
Smart Start ® Incentive = 10 fixtures x $10 per fixture = $100.

For CFL lamps (no reflector) there is no eligible Smart Start ® Incentive.

For replacement of T12 with T8 with electronic ballast is $10 per fixture.
Smart Start ® Incentive = (# of T8w/EB fixtures x $10 per fixture)
Smart Start ® Incentive = 48 fixtures x $10 per fixture = $480.

Occupancy Sensor Wall Mounted (existing facility only) = $20 per sensor.
Occupancy Sensor Remote Mounted (existing facility only) = $35 per sensor

$$\text{Smart Start® Incentive} = (\#\ \text{of wall mount} \times \$\ 20) + (\#\ \text{of ceiling mount} \times 35)$$
$$\text{Smart Start® Incentive} = (82 \times \$\ 20) + (19 \times \$35) = \$2{,}305$$

Energy Savings Summary:

ECM #10 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$31,540
NJ Smart Start Equipment Incentive ($):	$2,885
Net Installation Cost ($):	$28,655
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$4,780
Total Yearly Savings ($/Yr):	$4,780
Estimated ECM Lifetime (Yr):	15
Simple Payback	6.0
Simple Lifetime ROI	150.2%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$71,700
Internal Rate of Return (IRR)	14%
Net Present Value (NPV)	$28,408.33

ECM #11: Water Conservation Opportunities

Description:

Water conservation is defined as any action that reduces the amount of water withdrawn from water supply sources, reduces consumptive use, reduces the loss or waste of water, improves the efficiency of water use, increases recycling and reuse of water, or prevents the pollution of water. Conversely, water waste is the excessive use of potable water that is unproductive or does not reasonably sustain economic benefits or life forms, particularly where there is a shortage of potable water.

Faucets for restrooms, kitchen, and workroom sinks vary in flow rates. Restroom sinks need no more than 1.5 gallons per minute and kitchen sinks need about 2.5 gallons per minute while workroom sinks may include automated controls and pre-mixed temperatures. Toilets and urinals account for almost half of a typical building's water consumption. According to the Plumbing Foundation, replacing all existing toilets with 1.6 gallons per flush, ultra-low flow models and urinals with 1.0 gallons per flush models would save almost 5,000 gallons of water per person each year.

Toilets and urinals can be retrofitted with electronic controls. Potential water savings are greater with retrofits because current fixtures generally do not meet the latest water conservation standards. Electronic controls for plumbing fixtures usually function by transmitting a continuous beam of infrared (IR) light. With toilets and urinals, the flush is actuated when the user moves away and the IR beam is no longer blocked. With toilets and urinals, some of the water savings may be attributable to reduced incidence of intentional multiple-flushing – a common practice with toilets and urinals.

This ECM would only install low flow high performance sink aerators. The other ECMs discussed above were investigated but the payback periods were longer than 10 years and therefore would not benefit the Owner.

Water Savings Calculations:

The water savings for the faucet aerators were calculated by using the U. S. Department of Energy Federal Energy Management Program (FEMP) energy cost calculators for faucets, showerheads and urinals. Additional information on the referenced calculators can be found at www1.eere.energy.gov/femp/technologies. Water and sewer rates obtained from Burlington County are as follows:

Water: $3.10/1,000 gallons + **Sewer**: $2.80/1,000 gallons = **Total**: $5.90/1,000 gallons

Summary of the water savings for this facility are as follows:

Plumbing Fixture	# of Units	Water/Sewer Savings	Material $	Payback(Yrs.)
Faucet Aerators	40	$45	$800	17.8

The basis of calculation for the low flow high performance sink aerator is the UtilitySavers™ high performance Spray Stream. It is also assumed that the facility operators will install the new faucet aerators.

Cost Savings Summary:

ECM #11 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$800
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$800
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$45
Total Yearly Savings ($/Yr):	$45
Estimated ECM Lifetime (Yr):	10
Simple Payback	17.8
Simple Lifetime ROI	-43.8%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$450
Internal Rate of Return (IRR)	-9%
Net Present Value (NPV)	($416.14)

VIII. RENEWABLE/DISTRIBUTED ENERGY MEASURES

Globally, renewable energy has become a priority affecting international and domestic energy policy. The State of New Jersey has taken a proactive approach, and has recently adopted in its Energy Master Plan a goal of 30% renewable energy by 2020. To help reach this goal New Jersey created the Office of Clean Energy under the direction of the Board of Public Utilities and instituted a Renewable Energy Incentive Program to provide additional funding to private and public entities for installing qualified renewable technologies. A renewable energy source can greatly reduce a building's operating expenses while producing clean environmentally friendly energy. CEG has assessed the feasibility of installing renewable energy measures (REM) for the County utilizing renewable technologies and concluded that there is not a potential for solar energy or wind energy at the Burlington County Office/Court Facility. The following are the conclusions that have been drawn:

- *Solar Energy Analysis*: After review of potential available roof space it was determined that a solar system installation would not be technically and economically feasible to the owner. Because of the large mechanical penthouse located on the roof and other equipment, a large portion of the roof is shaded throughout the day making solar an unattractive option in those areas. There is a small portion of the roof available without shading, however a system of such a small size would provide little net benefit to the owner.

- *Wind Energy Analysis*: Based on CEG's review of the applicability of wind energy for the facility; the low average wind speed, proximity to residential neighborhoods, and limited site space make the Burlington County Office/Court Facility a poor candidate for wind energy production.

IX. ENERGY PURCHASING AND PROCUREMENT STRATEGY

Load Profile:

Load Profile analysis was performed to determine the seasonal energy usage of the facility. Irregularities in the load profile will indicate potential problems within the facility. Consequently based on the profile a recommendation will be made to remedy the irregularity in energy usage. For this report, the facility's energy consumption data was gathered in table format and plotted in graph form to create the load profile. Refer to The Electric and Natural Gas Usage Profiles included within this report to reference the respective electricity and natural gas usage load profiles.

Electricity:

The Electric Usage Profile demonstrates a fairly typical cooling load profile. The summer (May-August) demonstrates increased consumption typical to air conditioning load. There is a fairly steady yearlong electric load most likely attributable to lighting/miscellaneous plug loads in the facility. When the cooling season begins the electric load profile increases due to the operation of the chilled and condenser water system equipment and components. A flat load profile will allow for more competitive energy prices when shopping for alternative suppliers.

Natural Gas:

The Natural Gas Usage Profile demonstrates a very typical profile for a heating based load. The profile is steady with domestic hot water usage via operating one of the boilers to provide hot water to the storage tank utilizing a heat exchanger throughout the year. When comfort heating is required, the other boilers are required to operate and the load profile increases as is seen in December through March consumption. A base-load shaping (flat) will secure more competitive energy prices when procuring through an alternative energy source.

Tariff Analysis:

Electricity:

The facility receives electric distribution service through Public Service Electric & Gas Company (PSE&G) on rate schedule LPLS (Large Power and Light Service). The facility is currently contracted with a Third Party Supplier (TPS) to provide electric commodity service. For electric supply (generation) service, the client has a choice to either use PSE&G's default service rate (BGS-FP) or contract with a Third Party Supplier (TPS) to supply electric. Currently, via online auction, Hess is providing the TPS duties for the County.

Each year since 2002, the four New Jersey Electric Distribution Companies (EDCs) - Public Service Gas & Electric Company (PSE&G), Atlantic City Electric Company (ACE), Jersey Central Power & Light Company (JCP&L), and Rockland Electric Company (RECO) - have procured several billion dollars of electric supply to serve their Basic Generation Service (BGS) customers through a statewide auction process held in February.

BGS refers to the service of customers who are not served by a third party supplier or competitive retailer. This service is sometimes known as Standard Offer Service, Default Service, or Provider of Last Resort Service.

The Auction Process has consisted of two auctions that are held concurrently, one for larger customers on an hourly price plan (BGS-CIEP) and one for smaller commercial and residential customers on a fixed-price plan (BGS-FP). This facility's rate structure is based on the fixed-price plan (BGS-FP).

The utility, PSE&G will continue to be responsible for maintaining the existing network of wires, pipes and poles that make up the delivery system, which will serve all consumers, regardless of whom they choose to purchase their electricity or natural gas from. PSE&G's delivery service rate includes the following charges: Customer Service Charge, Distribution Charge (kWh and Demand), Societal Benefits Charge (SBC), and Securitization Transition Charge.

Natural Gas:

This facility currently receives natural gas distribution service to their two meter locations through PSE&G on rate schedule LVG (Large Volume General Service) and GSG (General Service Gas). This facility is currently receiving natural gas commodity supply from Great Eastern Energy as the Third Party Supplier via the County's online auction.

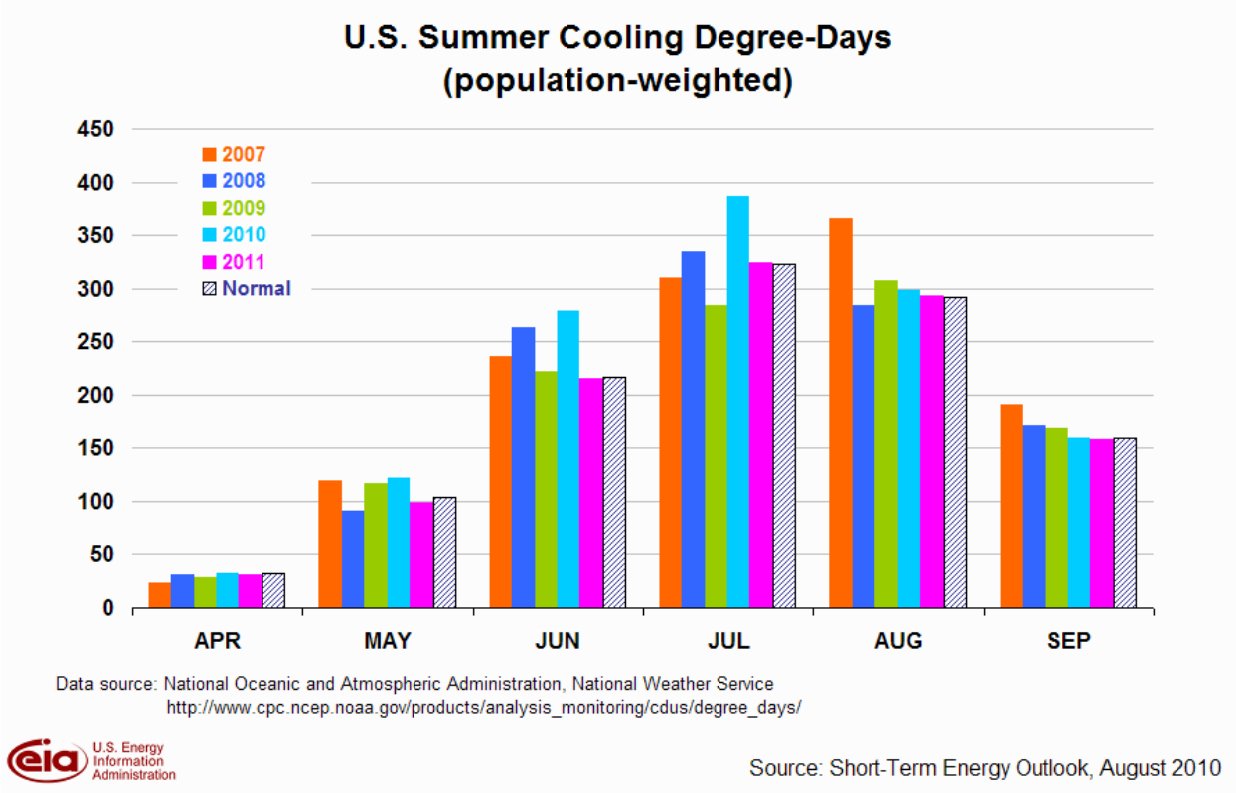
PSE&G provides basic gas supply service (BGSS) to customers who choose not to shop from a Third Party Supplier (TPS) for natural gas commodity. The option is essential to protect the reliability of service to consumers as well as protecting consumers if a third party supplier defaults or fails to provide commodity service. Please refer to the link below for a recap of natural gas BGSS charges from PSE&G for rate schedule LVG. http://www.pseg.com/companies/pseandg/schedules/pdf/commodity.pdf

The utility, PSE&G, is responsible for maintaining the existing network of wires, pipes and poles that make up the delivery system, which will serve all consumers, regardless of whom they choose to purchase their electricity or natural gas from. PSE&G's delivery service rate includes the following charges: Customer Service Charge, Distribution Charge, & Societal Benefits Charge (SBC).

Electric and Natural Gas Commodities Market Overview:

Current electricity and natural gas market pricing has remained relatively stable over the last year. Commodity pricing in 2008 marked historical highs in both natural gas and electricity commodity. Commodity pricing commencing spring of 2009 continuing through 2010, has decreased dramatically over 2008 historic highs and continues to be favorable for locking in long term (2-5 year) contracts with 3rd Party Supplier's for both natural gas and electricity supply requirements.

It is important to note that both natural gas and electric commodity market prices are moved by supply and demand, political conditions, market technicals and trader sentiment. This market is continuously changing. Energy commodity pricing is also correlated to weather forecasts. Because weather forecasts are dependable only in the short-term, prolonged temperature extremes can really cause extreme price swings.



Short Term Energy Outlook - US Energy Information Administration (10/13/2010):

U.S. Natural Gas Prices. The Henry Hub spot price averaged $3.89 per MMBtu in September, $0.43 per MMBtu lower than the average spot price in August. Prices are expected to remain below $4 per MMBtu in October but rise to $4.68 per MMBtu by January as space-heating demand increases this winter. EIA has revised its projections for natural gas prices downward through 2011. Expectations are now for a price of $4.16 per MMBtu for the last quarter of 2010, $0.27 per MMBtu (6 percent) lower than last month's Outlook, based on several weeks of strong inventory builds. Price expectations for 2011 are $4.58 per MMBtu, which is $0.18 per MMBtu (4 percent) lower than last month's forecast, primarily due to a stronger domestic production forecast.

Uncertainty over future natural gas prices is lower this year compared with last year at this time. Natural gas futures for December 2010 delivery for the 5-day period ending October 7 averaged $4.07 per MMBtu, and the average implied volatility over the same period was 39 percent. This produced lower and upper bounds for the 95-percent confidence interval of $3.09 per MMBtu and $5.37 per MMBtu, respectively. At this time last year, the natural gas December 2009 futures contract averaged $5.59 per MMBtu and implied volatility averaged 56 percent. The

corresponding lower and upper limits of the 95-percent confidence interval were $3.70 per MMBtu and $8.50 per MMBtu.

U.S. Electricity Consumption. The summer months of 2010 were warmer than normal, especially in the regions east of the Mississippi. Cooling degree-days in the east during June, July, and August ranged from 26 percent (in the South Atlantic region) to 46 percent (in New England) higher than normal. In contrast, cooling degree-days in the East as a whole were 7 percent lower than normal during 2009. The large year-over-year increase in cooling degree-days should help push up total 2010 consumption of electricity by 5 percent over last year's level. Total consumption is expected to fall slightly in 2011 as forecast temperatures return to near-normal levels

U.S. Electricity Retail Prices. Although the average U.S. residential retail price of electricity fell by nearly 1 percent during the first half of 2010 compared with the same period last year, prices are expected to increase by 1.5 percent year-over-year during the second half of 2010. Higher generation fuel costs this year are expected to be passed through to retail consumers during 2011, pushing up residential prices by 1.4 percent next year.

Recommendations:

1. CEG recommends a continued aggregated approach for 3rd party commodity supply procurement strategies for both electric and natural gas supply service. Currently the County is procuring electric & natural gas supply from a TPS administered by Birdsall Services Group. By aggregating all sites in the County for electricity and natural gas procurement, the County is capable of realizing the continued significant reduction in energy supply costs. Energy commodities are among the most volatile of all commodities, however at this point and time, energy is extremely competitive.

   The below recommendations presented by CEG are based on current information provided by the County for its utility usage, any savings presented with these recommendations are estimates only based on that information. It is recommended that further analysis and review of more recent utility data and any current 3rd party supply contracts be performed prior to performing any of the presented recommendations.

   Overall, after review of the utility consumption, billing, and current commodity pricing outlook, CEG recommends that the County continue to utilize the advisement of 3rd party unbiased Energy Consulting Firms experienced in the aggregation of facilities and procurement of retail natural gas and electricity commodity. The Energy Consulting Firm should incorporate a rational, defensible strategy for purchasing commodity in volatile markets based upon the following:

   - Budgets that reflect sound market intelligence
   - An understanding of historical prices and trends
   - Awareness of seasonal opportunities (e.g. shoulder months)
   - Negotiation of fair contractual terms
   - An aggressive, market based price

2. CEG recommends that the County consider utilizing a third party utility billing-auditing service (if not being implemented already) to further analyze historical utility invoices such as water, sewer, electric and natural gas for incorrect billings and rate tariff optimization services. This service could provide refunds on potential over billings experienced by the County.

3. CEG recommends that the County explore Demand Response Programs that may be available in aggregate for its facilities. Demand response is the action of end users lowering their demand for electric (reducing consumption) in order to help balance supply and demand on the electric grid and ensure stability. The greatest need for demand response typically occurs during times of peak electricity demand, between the hours of 11 am and 6 pm, when extra strain is placed on the grid from situations such as increased air conditioning use on hot days or downed power lines resulting from a storm. Significant incentives are available for clients enrolled in demand response programs. It is strongly recommended that the County utilize an experienced 3rd party unbiased energy consulting firm prior to initiating any demand response programs. This is recommended due to the potential conflicts with existing and/or future electric supply service agreements and transparency created by the evaluation of current programs and incentives available.

X. INSTALLATION FUNDING OPTIONS

CEG has reviewed various funding options for the facility owner to utilize in subsidizing the costs for installing the energy conservation measures noted within this report. Below are a few alternative funding methods:

i. *Energy Savings Improvement Program (ESIP)* – Public Law 2009, Chapter 4 authorizes government entities to make energy related improvements to their facilities and par for the costs using the value of energy savings that result from the improvements. The "Energy Savings Improvement Program (ESIP)" law provides a flexible approach that can allow all government agencies in New Jersey to improve and reduce energy usage with minimal expenditure of new financial resources.

ii. *Municipal Bonds* – Municipal bonds are a bond issued by a city or other local government, or their agencies. Potential issuers of municipal bonds include cities, counties, redevelopment agencies, school districts, publicly owned airports and seaports, and any other governmental entity (or group of governments) below the state level. Municipal bonds may be general obligations of the issuer or secured by specified revenues. Interest income received by holders of municipal bonds is often exempt from the federal income tax and from the income tax of the state in which they are issued, although municipal bonds issued for certain purposes may not be tax exempt.

iii. *Power Purchase Agreement* – Public Law 2008, Chapter 3 authorizes contractor of up to fifteen (15) years for contracts commonly known as "power purchase agreements." These are programs where the contracting unit (Owner) procures a contract for, in most cases, a third party to install, maintain, and own a renewable energy system. These renewable energy systems are typically solar panels, windmills or other systems that create renewable energy. In exchange for the third party's work of installing, maintaining and owning the renewable energy system, the contracting unit (Owner) agrees to purchase the power generated by the renewable energy system from the third party at agreed upon energy rates.

iv. *Pay For Performance* – The New Jersey Smart Start Pay for Performance program includes incentives based on savings resulted from implemented ECMs. The program is available for all buildings that were audited as part of the NJ Clean Energy's Local Government Energy Audit Program. The facility's participation in the program is assisted by an approved program partner. An "Energy Reduction Plan" is created with the facility and approved partner to shown at least 15% reduction in the building's current energy use. Multiple energy conservation measures implemented together are applicable toward the total savings of at least 15%. No more than 50% of the total energy savings can result from lighting upgrades / changes.

Total incentive is capped at 50% of the project cost. The program savings is broken down into three benchmarks; Energy Reduction Plan, Project Implementation, and Measurement and Verification. Each step provides additional incentives as the energy reduction project continues. The benchmark incentives are as follows:

1. *Energy Reduction Plan* – Upon completion of an energy reduction plan by an approved program partner, the incentive will grant $0.10 per square foot between $5,000 and $50,000, and not to exceed 50% of the facility's annual energy expense. (Benchmark #1 is not provided in addition to the local government energy audit program incentive.)

2. *Project Implementation* – Upon installation of the recommended measures along with the "Substantial Completion Construction Report," the incentive will grant savings per KWH or Therm based on the program's rates. Minimum saving must be 15%. (Example $0.11 / kWh for 15% savings, $0.12/ kWh for 17% savings, … and $1.10 / Therm for 15% savings, $1.20 / Therm for 17% saving, …) Increased incentives result from projected savings above 15%.

3. *Measurement and Verification* – Upon verification 12 months after implementation of all recommended measures, that actual savings have been achieved, based on a completed verification report, the incentive will grant additional savings per kWh or Therm based on the program's rates. Minimum savings must be 15%. (Example $0.07 / kWh for 15% savings, $0.08/ kWh for 17% savings, … and $0.70 / Therm for 15% savings, $0.80 / Therm for 17% saving, …) Increased incentives result from verified savings above 15%.

v. *Energy Efficiency and Conservation Block Grants* – The EECGB rebate provides supplemental funding up to $20,000 for counties and local government entities to implement energy conservation measures. For 2011, the supplemental funding is expected to be increased to $50,000. The EECGB funding is provided through the American Recovery and Reinvestment Act (ARRA). The local government must be among the eligible local government entities listed on the NJ Clean Energy website as follows - http://njcleanenergy.com/commercial-industrial/programs/eecbg-eligible-entities. This program is limited to municipalities and counties that have not already received grants directly through the US department of Energy.

This incentive is provided in addition to the other NJ Clean Energy program funding. This program's incentive is considered the entity's capital and therefore can be applied to the LGEA program's requirements to implement the recommended energy conservation measures totaling at least 25% of the energy audit cost. Additional requirements of this program are as follows:

1. The entity must utilize additional funding through one or more of the NJ Clean Energy programs such as Smart Start, Direct Install, and Pay for Performance.

2. The EECBG funding in combination with other NJ Clean Energy programs may not exceed the total cost of the energy conservation measures being implemented.

3. Envelope measures are applicable only if recommended by the LGEA energy audit and if the energy audit was completed within the past 12 months.

4. New construction and previously installed measures are not eligible for the EECBG rebate.

5. Energy conservation measures eligible for the EECBG must fall within the list of approved energy conservation measures. The complete list of eligible measures and other program requirements are included in the "EECBG Complete Application Package." The application package is available on the NJ Clean Energy website - http://njcleanenergy.com/commercial-industrial/programs/energy-efficiency-and-conservation-block-grants.

CEG recommends the Owner review the use of the above-listed funding options in addition to utilizing their standard method of financing for facilities upgrades in order to fund the proposed energy conservation measures.

XI. 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. Confirm that outside air economizers on the air handling units are functioning properly to take advantage of free cooling and avoid excess outside air during occupied periods.

F. Check and confirm time-clocks in the building especially for exhaust fans and make sure all the pins are in place and working properly.

ECM COST & SAVINGS BREAKDOWN

CONCORD ENGINEERING GROUP

Burlington County - County Offices & Courts

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 (IRR)	NET PRESENT VALUE (NPV)
		MATERIAL	LABOR	REBATES, INCENTIVES	NET INSTALLATION COST	ENERGY	MAINT. / SREC	TOTAL		(Yearly Saving * ECM Lifetime)	(Yearly Maint Svaing * 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)	($/Yr)	(Yr)	($)	($)	(%)	(Yr)	($)	($)
ECM #1	Steam Plant Upgrade	$173,600	$43,400	$0	$217,000	$22,118	$0	$22,118	25	$552,950	$0	154.8%	9.8	9.01%	$168,144.00
ECM #2	Insulate Steam Piping and Steam Valves in Central Plant	$17,600	$4,400	$0	$22,000	$2,428	$0	$2,428	24	$58,272	$0	164.9%	9.1	9.89%	$19,119.50
ECM #3	Install High Efficiency Water Cooled Centrifugal Chiller	$384,000	$96,000	$0	$480,000	$30,509	$0	$30,509	25	$762,725	$0	58.9%	15.7	3.93%	$51,257.72
ECM #4	All-Variable-Speed Chilled Water Plant	$230,400	$57,600	$0	$288,000	$29,620	$0	$29,620	15	$444,300	$0	54.3%	9.7	5.98%	$65,601.64
ECM #5	Replace Condensate Receivers/Pumps	$40,800	$10,200	$0	$51,000	$4,695	$0	$4,695	15	$70,425	$0	38.1%	10.9	4.33%	$5,048.61
ECM #6	Install NEMA Premium® Efficient Motors	$22,220	$5,555	$1,024	$26,751	$2,538	$0	$2,538	18	$45,684	$0	70.8%	10.5	6.36%	$8,155.42
ECM #7	New Higher Efficiency Pumps	$20,375	$3,465	$0	$23,840	$5,240	$0	$5,240	20	$104,800	$0	339.6%	4.5	21.54%	$54,117.97
ECM #8	Direct Steam-Fired Domestic Hot Water Heater	$81,600	$20,400	$0	$102,000	$2,799	$0	$2,799	12	$33,588	$0	-67.1%	36.4	-13.98%	($74,138.74)
ECM #9	Reducing Demand Charges	$16,000	$4,000	$0	$20,000	$1,488	$0	$1,488	15	$22,320	$0	11.6%	13.4	1.40%	($2,236.35)
ECM #10	Lighting and Controls Upgrades	$25,232	$6,308	$2,885	$28,655	$4,780	$0	$4,780	15	$71,700	$0	150.2%	6.0	14.49%	$28,408.33
ECM #11	Water Conservation Opportunities	$800	$0	$0	$800	$26	$0	$26	10	$260	$0	-67.5%	30.8	-16.52%	($578.21)

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 ≥ 16 $600 per ton, EER ≥ 18 $750 per ton, EER ≥ 20

Energy Efficiency must comply with ASHRAE 90.1-2004

Gas Heating

Gas Fired Boilers < 300 MBH	$300 per unit
Gas Fired Boilers ≥ 300 - 1500 MBH	$1.75 per MBH
Gas Fired Boilers ≥1500 - ≤ 4000 MBH	$1.00 per MBH
Gas Fired Boilers > 4000 MBH	(Calculated through Custom Measure Path)
Gas Furnaces	$300 - $400 per unit, AFUE ≥ 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 ≤ 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 ≥ 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	$50 per fixture
HID ≥ 100w Replacement with new HID ≥ 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%

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington County - Offices and Courts Facility

Boilers

Tag	B-3	B-2	B-1
Unit Type	3-Pass, Wet-Back Steam Boiler	3-Pass, Wet-Back Steam Boiler	3-Pass, Wet-Back Steam Boiler
Qty	1	1	1
Location	Facility Basement Boiler Room	Facility Basement Boiler Room	Facility Basement Boiler Room
Area Served	Entire Facility	Entire Facility	Entire Facility
Manufacturer	Burnham	Burnham	Burnham
Model #	4FL-827-50-LB	4FL-675A-50-LB	4FL-827-50-LB
Serial #	N/A	N/A	N/A
Input Capacity (MBH)	7381 (165 BHP)	5650 (135 BHP)	7381 (165 BHP)
Rated Output Capacity (MBH)	5,537	4,520	5,537
Rated Output (Lbs/Hr of Steam)	5,706	4,660	5,706
Approx. Efficiency %	70%	70%	** 60%
Fuel	Nat Gas	Nat Gas	Nat Gas
Approx Age	35	35	35
Ashrae Service Life	25	25	25
Remaining Life	**10**	**10**	**10**
Comments	5HP Blower, Power Flame Dual-Fuel Burner	5HP Blower, Power Flame Dual-Fuel Burner	**** Unit in Need of Major Repairs**

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington County - Offices and Courts Facility

Pumps

Tag	P-11	P-9	P-8	P-6 & P-7	P-1
Unit Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Qty	1	1	1	1	1
Location	Boiler Room	Boiler Room	Boiler Room	Boiler Room	Chiller Room
Area Served	HW for Fan Coil Units	Offices and Courts	HW for Reheat Coils	Pre-heat and Reheat Coils	CW for Offices and Courts
Manufacturer	N/A	N/A	N/A	N/A	N/A
Model #	N/A	N/A	N/A	N/A	N/A
Serial #	N/A	N/A	N/A	N/A	N/A
Horse Power	25	25	5	20	50
Flow	331 GPM @115' TDH	705 GPM @ 80' TDH	200 GPM @ 50 ' TDH	334 GPM @ 115' TDH	960 GPM @ 120' TDH
Motor Info	Century E-Plus 25 HP	Lincoln	Lincoln	Lincoln	Lincoln
Electrical Power	208/460 3-Phase	208/460 3-Phase	208/460 3-Phase	208/460 3-Phase	208/460 3-Phase
RPM	1740	1750	1745	1750	1770
Motor Efficiency %	94.1%	88.5%	81.5%	86.0%	90.7%
Approx Age	3	N/A	N/A	N/A	N/A
Ashrae Service Life	20	20	20	20	20
Remaining Life	17				
Comments					

Pumps (Continued)

Tag	P-2	P-3	P-4	P-5	P-10
Unit Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Qty	1	1	1	1	1
Location	Chiller Room	Chiller Room	Chiller Room	Chiller Room	Boiler Room
Area Served	CW for Offices & Courts	CW or Condenser Water	Condenser Water for Chiller #1	Condenser Water for Chiller #2	FCU CW and HW
Manufacturer	N/A	N/A	N/A	N/A	N/A
Model #	N/A	N/A	N/A	N/A	N/A
Serial #	N/A	N/A	N/A	N/A	N/A
Horse Power	50	50	40	40	25
Flow	960 GPM @ 120' TDH	960 GPM @ 120' TDH	1150 GPM @ 107' TDH	1150 GPM @ 107' TDH	331 GPM @ 115' TDH
Motor Info	Dayton	Lincoln	Baldor Super E	Baldor Super E	Century E-Plus 25 HP
Electrical Power	208/460 3-Phase	208/460 3-Phase	208/460 3-Phase	208/460 3-Phase	208/460 3-Phase
RPM	1775	1770	1775	1780	1740
Motor Efficiency %	94.5%	Not on tag	94.5%	95%	94.1%
Approx Age	2	N/A	2	2	3
Ashrae Service Life	20	20	20	20	20
Remaining Life	18		18	18	17
Comments		On Standby	York Air-Modulator VFD	York Air-Modulator VFD	On Standby

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington County - Offices and Courts Facility

SPLIT CONDENSING UNITS

Tag	CU-5	CU-6	CU-7
Unit Type	Split CU	Split CU	Split CU
Qty	1	1	1
Location	Roof	Roof	Roof
Unit Served	AC-5	AC-6	AC-7
Manufacturer	Trane Odyssey	Trane Odyssey	Trane Odyssey
Model #	TTA240B400FA	TTA120B400FA	TTA180B400FA
Serial #	7021YGMAD	7022T77AD	70143WLAD
Cooling Type	DX Coil	DX Coil	DX Coil
Cooling Capacity (Tons)	20-Tons	10-Tons	15-Ton
Cooling Efficiency (SEER/EER)	EER =11.1	EER =11.1	EER =11.1
Approx Age	3	3	3
Ashrae Service Life	20	20	20
Remaining Life	17	17	17
Comments			

Tag	CU-8	Server Room	Dry Cooler (Data Center)
Unit Type	Split CU	Split CU	Air-Cooled Condenser
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	AC-8	Server Room	Data Center
Manufacturer	Trane Odyssey	EMI	Larkin (Heatcraft)
Model #	TTA180B400FA	S1CA9000A00	PFG21
Serial #	70145F4AD	1-06-M-9335-50	T00A01336
Cooling Type	DX Coil	DX Coil	Glycol Dry Cooler
Cooling Capacity (Tons)	15-Tons	3/4-Ton	
Cooling Efficiency (SEER/EER)	EER = 11.1	SEER=13	
Approx Age	3	4	
Ashrae Service Life	20	20	
Remaining Life	17	16	
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington County - Offices and Courts Facility

Air Handling Units

Tag	AC-1	AC-2	AC-3	AC-4
Location	Ground Fl - Mechanical Rm	1st Floor - Mechanical Rm	2nd Fl - Mechanical Rm	Penthouse - Mechanical Rm
Area Served	Ground Floor	1st Floor	2nd Floor	3rd Floor
Manufacturer	Trane M-Series	Trane M-Series	Trane M-Series	Trane M-Series
Qty	1	1	1	1
Model #	No tag	No tag	No tag	No tag
Serial #	No tag	No tag	No tag	No tag
Cooling Coil	Chilled Water	Chilled Water	Chilled Water	Chilled Water
Cooling Capacity, Mbh	312	480	588	228
Supply Flow, CFM	3,870	5,890	7,000	2,500
Heating Type	Hot Water/Steam Pre-heat	Hot Water/Steam Pre-heat	Hot Water/Steam Pre-heat	Hot Water/Steam Pre-heat
Input (MBh)	N/A	N/A	N/A	N/A
Output (MBh)	N/A	N/A	N/A	N/A
Supply Motor HP	3	5	5	2
Supply Motor Efficiency	N/A	81.50%	81.50%	N/A
Approx. Age	N/A	N/A	N/A	N/A
ASHRAE Service Life	20	20	20	20
Remaining Life				
Notes				

Tag	AC-5	AC-6	AC-7	AC-8
Location	Rooftop Penthouse	Rooftop Penthouse	Rooftop Penthouse	Rooftop Penthouse
Area Served	3rd Floor	3rd Floor	3rd Floor	3rd Floor
Manufacturer	Trane M-Series	Trane M-Series	Trane M-Series	Trane M-Series
Qty	1	1	1	1
Model #	MCCB010UA0BOUB	MCCB006UAOBOUB	MCCB010UA0BOUA	MCCB010UAOBOUA
Serial #	K07A05767	K07A05177	K07A05776	K07A05186
Cooling Coil	DX Coil	DX Coil	DX Coil	DX Coil
Cooling Capacity, Mbh	240	120	180	180
Supply Flow, CFM	5,360	2,700	4,250	4,250
Heating Type	Hot Water	Hot Water	Hot Water	Hot Water
Input (MBh)	N/A	N/A	N/A	N/A
Output (MBh)	N/A	N/A	N/A	N/A
Supply Motor HP	3	3	3	3
Supply Motor Efficiency	86.5%	86.5%	86.5%	86.5%
Approx. Age	3	3	3	3
ASHRAE Service Life	20	20	20	20
Remaining Life	17	17	17	17
Notes				

Tag	AC-9	AC-10	AHU-1/1A	AHU-2/2A
Location	Old Boiler Room	Mechanical Room	Roof Penthouse	Roof Penthouse
Area Served	Cafeteria/Jury Management		Courts Facility	Courts Facility
Manufacturer	Trane M-Series	Trane M-Series	McQuay	McQuay
Qty	1	1	1	1
Model #	No tag	MCCA006GAHOABA000	MSL164CH	MSL150CH
Serial #	No tag	K94J70208	3KM00248-00	3KM00082
Cooling Coil	Chilled Water	Chilled Water	CW Coil	CW Coil
Cooling Capacity, Mbh	288	180		
Supply Flow, CFM	8,000	5,200	30,000	25,000
Heating Type	Hot Water/Steam Pre-heat	Hot Water/Steam Pre-heat	Hot Water	Hot Water
Input (MBh)				
Output (MBh)				
Supply Motor HP	5	3	5/10 HP	5/10 HP
Supply Motor Efficiency	87.5%	N/A	81.5%/84.0%	81.5%/84.0%
Approx. Age	4	N/A	29	29
ASHRAE Service Life	20	20	20	20
Remaining Life	16		9	9
Notes				

MAJOR EQUIPMENT LIST

Concord Engineering Group

BURLINGTON COUNTY - OFFICES & COURTS FACILITY

Large Exhaust Fans			
Tag	**EF-5**	**EF-6**	**EF-2**
Unit Type	Centrifugal	Centrifugal	Centrifugal
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served			
Manufacturer	Greenheck	Greenheck	Greenheck
Model #	CWB-240-15	GB-180HP-10	GB-140-5
Serial #	99F20237	99F19120	99F19034
Fan HP	1 1/2	1	1/2
Fan CFM			
Approx Age	11	11	11
Ashrae Service Life	25	25	25
Remaining Life	14	14	14
Comments			

Exhaust Fans Continued			
Tag	**EF-4**	**EF-3**	**EF-1**
Unit Type	Centrifugal	Centrifugal	Centrifugal
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served			
Manufacturer	Greenheck	Greenheck	Penn Ventilation
Model #	CWB-300-15	GB-140-3X-QD	DX14B
Serial #	99F20243	99A11879	N/A
Fan HP	1 1/2	1/3	1/2
Fan CFM			
Approx Age	11	11	N/A
Ashrae Service Life	25	25	25
Remaining Life	14	14	N/A
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington County - Offices and Courts Facility

Cooling Tower

Tag	Cooling Tower	Cooling Tower
Location	Roof	Roof
Area Served	Chiller #1	Chiller #2
Manufacturer	BAC	BAC
Qty.	1	1
Model #	42415C	42415C
Serial #	791529D	791529D
Service	Regular	Regular
Nominal Capacity	450	450
GPM	1,150	1,150
Ambient Air WB	78°F	78°F
Number of Cells	2	2
Fan-1 HP	15	15
Fan-1 Eff	84%	84%
Fan-2 HP	15	15
Fan-2 Eff	84%	84%
V/Ph/Hz	460/3	460/3
FLA		
Approx. Age	30	30
ASHRAE Service Life	25	25
Remaining Life	-5	-5
Notes		

MAJOR EQUIPMENT LIST

Concord Engineering Group
Burlington County - Offices and Courts Facility

Chiller

Tag	CH-1	CH-2
Unit Type	Water Cooled Chiller	Water Cooled Chiller
Qty	1	1
Location	Chiller Room	Chiller Room
Area Served	All Areas	All Areas
Manufacturer	Trane	Trane
Model #	CVHA-044G	CVHA-044G
Serial #	179K01916	179K01917
Refrigerant	R-123	R-123
Cooling Capacity (Tons)	450 Nominal Tons	450 Nominal Tons
Cooling Efficiency (KW/Ton)	0.95 KW/Ton (Full Load)	0.95 KW/Ton (Full Load)
Volts / Phase / Hz	460/3/60	460/3/60
Chilled Water GPM / ΔT	960 GPM/10°F	960 GPM/10°F
Approx Age	31	31
Ashrae Service Life	30	30
Remaining Life	(1)	(1)
Comments		

Investment Grade Lighting Audit

CEG Job #: 9C10048
Project: Burlington County
Address: 49 Rancocas Road
Mount Holly, NJ
Bldg. Sq. Ft. 225,400

County Office Building

KWH COST: $0.121

ECM #10: 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
Suite 355 Human Resoures																						
242.21	Conference Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$130.87	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	10	2	Recessed Down Light, (2) 26w PL Lamp	54	0.54	1,404.0	$169.88	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	6	2	Recessed Down Light, (2) 26w PL Lamp	54	0.32	842.4	$101.93	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office/Files	2600	9	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.94	2,433.6	$294.47	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	12	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.70	1,809.6	$218.96	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 354 Civil																						
242.21	Office	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$98.16	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office	2600	22	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.29	5,948.8	$719.80	22	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Common																						
211.12	3rd Floor Corridor	4400	12	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	0.36	1,584.0	$191.66	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	2	2	(2) 7w CFL Exit Sign	16	0.03	280.3	$33.92	2	1	LED Exit Sign	2	0.00	35.04	$4.24	$65.00	$130.00	0.03	245.28	$29.68	4.38
121.11	Stairwell	8760	10	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.78	6,832.8	$826.77	10	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.58	5080.8	$614.78	$100.00	$1,000.00	0.20	1752	$211.99	4.72
121.14	3rd Floor Men's Restroom	4400	5	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.39	1,716.0	$207.64	5	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.29	1276	$154.40	$100.00	$500.00	0.10	440	$53.24	9.39
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.08	343.2	$41.53	1	3	3 Lamp, 17w T8, Elect. Ballast; retrofit	47	0.05	206.8	$25.02	$100.00	$100.00	0.03	136.4	$16.50	6.06
121.11	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.08	93.6	$11.33	1	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.06	69.6	$8.42	$100.00	$100.00	0.02	24	$2.90	34.44
242.21	3rd Floor Women's	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	457.6	$55.37	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

111.14	Women's Restroom	4400	5	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.24	1,056.0	$127.78	5	1	1 Lamp, 32w T8, Elect. Ballast; retrofit	30	0.15	660	$79.86	$80.00	$400.00	0.09	396	$47.92	8.35
Suite 315																						
242.21	Open Office	2600	10	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.04	2,704.0	$327.18	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21		2600	11	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.72	4,461.6	$539.85	11	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.95	2459.6	$297.61	$100.00	$1,100.00	0.77	2002	$242.24	4.54
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	$18.25	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Common																						
121.11	Stairwell	8760	8	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.62	5,466.2	$661.42	8	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.46	4064.64	$491.82	$100.00	$800.00	0.16	1401.6	$169.59	4.72
211.12	2nd Floor Corridor	4400	104	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	3.12	13,728.0	$1,661.09	104	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	4	2	(2) 7w CFL Exit Sign	16	0.06	560.6	$67.84	4	1	LED Exit Sign	2	0.01	70.08	$8.48	$65.00	$260.00	0.06	490.56	$59.36	4.38
Solicitor's Offices																						
242.21	Conference Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$130.87	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	$36.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	4	2	Recessed Down Light, (2) 26w PL Lamp	54	0.22	561.6	$67.95	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	3	2	Recessed Down Light, (2) 26w PL Lamp	54	0.16	421.2	$50.97	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Break Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Files/Work Station Area	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$130.87	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Hall/Reception Area	2600	9	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.52	1,357.2	$164.22	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Open Office/File Area	2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	603.2	$72.99	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21		2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.87	4,867.2	$588.93	18	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Common																						
221.14		4400	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.12	510.4	$61.76	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

121.14	2nd Floor Men's Restroom	4400	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.23	1,029.6	$124.58	3	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.17	765.6	$92.64	$100.00	$300.00	0.06	264	$31.94	9.39
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.08	343.2	$41.53	1	3	3 Lamp, 17w T8, Elect. Ballast; retrofit	47	0.05	206.8	$25.02	$100.00	$100.00	0.03	136.4	$16.50	6.06
121.14	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.08	93.6	$11.33	1	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.06	69.6	$8.42	$100.00	$100.00	0.02	24	$2.90	34.44
242.21	2nd Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	457.6	$55.37	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
111.14		4400	2	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.10	422.4	$51.11	2	1	1 Lamp, 32w T8, Elect. Ballast; retrofit	30	0.06	264	$31.94	$80.00	$160.00	0.04	158.4	$19.17	8.35
121.14		4400	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.23	1,029.6	$124.58	3	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.17	765.6	$92.64	$100.00	$300.00	0.06	264	$31.94	9.39
Suite 222 IT Department																					
242.21	Open Office	2600	22	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.29	5,948.8	$719.80	22	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	IT Room	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	$36.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Conference Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$130.87	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	End Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 202 Sherrif																					
2	Sherrif's Office	2600	5	2	Recessed Down Light, (2) 26w PL Lamp	54	0.27	702.0	$84.94	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21		2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	603.2	$72.99	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Sherrif's File/Reception Area	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Undersherrif - Vanderbilt	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	2	2	Recessed Down Light, (2) 26w PL Lamp	54	0.11	280.8	$33.98	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Undersherrif - Sano	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	$18.25	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office/Files	2600	20	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.08	5,408.0	$654.37	20	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D/SGT Office	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$98.16	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	$18.25	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Interrogation	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Break Room	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Front Desk	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$98.16	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Civil Processing Unit	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1,352.0	$163.59	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 204 Prosecutor's Tech. Services Unit																					
242.21	Processing Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

227.21	Processing Room	2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	$18.25	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Processing/ Storage	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$392.62	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	$36.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Evidence Holding	1200	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	139.2	$16.84	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 211 Sherrif's Interrogation																						
242.21	Open Office	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	$196.31	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	$36.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Files/Storage	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	$36.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Hall/Copy Area	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	File Storage Room	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Dectective Sergant Office	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	K9 Office	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Common																						
211.12		4400	94	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	2.82	12,408.0	$1,501.37	94	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
601	1st Floor Corridor	8760	4	2	(2) 7w CFL Exit Sign	16	0.06	560.6	$67.84	4	1	LED Exit Sign	2	0.01	70.08	$8.48	$65.00	$260.00	0.06	490.56	$59.36	4.38
227.21		4400	13	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.75	3,317.6	$401.43	13	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	1st Floor Men's Restroom	4400	5	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.39	1,716.0	$207.64	5	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.29	1276	$154.40	$100.00	$500.00	0.10	440	$53.24	9.39
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.08	343.2	$41.53	1	3	3 Lamp, 17w T8, Elect. Ballast; retrofit	47	0.05	206.8	$25.02	$100.00	$100.00	0.03	136.4	$16.50	6.06
121.14	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.08	93.6	$11.33	1	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.06	69.6	$8.42	$100.00	$100.00	0.02	24	$2.90	34.44
242.21	1st Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	457.6	$55.37	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
111.14		4400	5	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.24	1,056.0	$127.78	5	1	1 Lamp, 32w T8, Elect. Ballast; retrofit	30	0.15	660	$79.86	$80.00	$400.00	0.09	396	$47.92	8.35
Board Room																						
121.21	Board Room	1200	24	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	1.87	2,246.4	$271.81	24	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	1.39	1670.4	$202.12	$100.00	$2,400.00	0.48	576	$69.70	34.44
121.11	Side Office	1200	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.31	374.4	$45.30	4	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.23	278.4	$33.69	$100.00	$400.00	0.08	96	$11.62	34.44
121.11	Side Office	1200	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.31	374.4	$45.30	4	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.23	278.4	$33.69	$100.00	$400.00	0.08	96	$11.62	34.44
121.11	Side Office	1200	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.31	374.4	$45.30	4	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.23	278.4	$33.69	$100.00	$400.00	0.08	96	$11.62	34.44
Suite 123 Freeholders																						
121.11	Side Office	2600	6	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.47	1,216.8	$147.23	6	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.35	904.8	$109.48	$100.00	$600.00	0.12	312	$37.75	15.89
121.11	Side Office	2600	6	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.47	1,216.8	$147.23	6	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.35	904.8	$109.48	$100.00	$600.00	0.12	312	$37.75	15.89

Investment Grade Lighting Audit

121.11	Side Office	2600	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.31	811.2	$98.16	4	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.23	603.2	$72.99	$100.00	$400.00	0.08	208	$25.17	15.89
221.21	Hall	2600	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Acrylic Lens	58	0.35	904.8	$109.48	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Reception/ Open Office	2600	8	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.83	2,163.2	$261.75	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 108 Freeholder's Staff																						
142.21	Side Office	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.31	811.2	$98.16	2	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.17	447.2	$54.11	$100.00	$200.00	0.14	364	$44.04	4.54
142.21	Coffee/Copy Area	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.31	811.2	$98.16	2	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.17	447.2	$54.11	$100.00	$200.00	0.14	364	$44.04	4.54
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.09	223.6	$27.06	$100.00	$100.00	0.07	182	$22.02	4.54
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.09	223.6	$27.06	$100.00	$100.00	0.07	182	$22.02	4.54
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.09	223.6	$27.06	$100.00	$100.00	0.07	182	$22.02	4.54
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.09	223.6	$27.06	$100.00	$100.00	0.07	182	$22.02	4.54
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Conference Room	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.31	811.2	$98.16	2	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.17	447.2	$54.11	$100.00	$200.00	0.14	364	$44.04	4.54
242.21		2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	End Office	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.31	811.2	$98.16	2	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.17	447.2	$54.11	$100.00	$200.00	0.14	364	$44.04	4.54
142.21	Open Office/Files	2600	8	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.25	3,244.8	$392.62	8	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.69	1788.8	$216.44	$100.00	$800.00	0.56	1456	$176.18	4.54
Suite 111 IT																						
242.21	Open Office	2600	13	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.35	3,515.2	$425.34	13	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.21	IT Dept.	2600	9	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.52	1,357.2	$164.22	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.21	Server Room	2600	15	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.87	2,262.0	$273.70	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1,352.0	$163.59	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Conf. Rm/ Office	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$98.16	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 107 Insurance & Risk Management																						
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Conference Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	3	2	Recessed Down Light, (2) 26w PL Lamp	54	0.16	421.2	$50.97	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	End Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office/Files	2600	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.14	2,974.4	$359.90	11	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office/Files	2600	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.14	2,974.4	$359.90	11	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	3	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.17	452.4	$54.74	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	3	2	Recessed Down Light, (2) 26w PL Lamp	54	0.16	421.2	$50.97	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Finance																						
242.21	Open Office/Files	2600	15	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.56	4,056.0	$490.78	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	603.2	$72.99	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Common																						
227.21	Ground Floor Corridor	4400	9	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.52	2,296.8	$277.91	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
211.14		4400	88	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	2.64	11,616.0	$1,405.54	88	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	4	2	(2) 7w CFL Exit Sign	16	0.06	560.6	$67.84	4	1	LED Exit Sign	2	0.01	70.08	$8.48	$65.00	$260.00	0.06	490.56	$59.36	4.38
121.14	Ground Floor Men's Restroom	4400	5	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.39	1,716.0	$207.64	5	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.29	1276	$154.40	$100.00	$500.00	0.10	440	$53.24	9.39
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.08	343.2	$41.53	1	3	3 Lamp, 17w T8, Elect. Ballast; retrofit	47	0.05	206.8	$25.02	$100.00	$100.00	0.03	136.4	$16.50	6.06
121.14	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.08	93.6	$11.33	1	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.06	69.6	$8.42	$100.00	$100.00	0.02	24	$2.90	34.44
242.21	Ground Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	457.6	$55.37	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
111.14		4400	5	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.24	1,056.0	$127.78	5	1	1 Lamp, 32w T8, Elect. Ballast; retrofit	30	0.15	660	$79.86	$80.00	$400.00	0.09	396	$47.92	8.35
Print Shop																						
142.11	Print Shop Pick Up	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.09	223.6	$27.06	$100.00	$100.00	0.07	182	$22.02	4.54
242.21	Print Shop	2600	8	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.83	2,163.2	$261.75	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

242.21	Rear Printing Area	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Hall/ Paper Storage	2600	3	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.17	452.4	$54.74	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	1	2	(2) 7w CFL Exit Sign	16	0.02	140.2	$16.96	1	1	LED Exit Sign	2	0.00	17.52	$2.12	$65.00	$65.00	0.01	122.64	$14.84	4.38
Suite G22 Board Of Elections																						
242.21	Open Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21		2600	13	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	2.03	5,272.8	$638.01	13	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	1.12	2906.8	$351.72	$100.00	$1,300.00	0.91	2366	$286.29	4.54
142.211	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	4	4 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	104	0.10	270.4	$32.72	$120.00	$120.00	0.05	135.2	$16.36	7.34
142.211	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.16	405.6	$49.08	1	4	4 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	104	0.10	270.4	$32.72	$120.00	$120.00	0.05	135.2	$16.36	7.34
142.21	Mail Room/ Storage Area	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.31	811.2	$98.16	2	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.17	447.2	$54.11	$100.00	$200.00	0.14	364	$44.04	4.54
Jury Room																						
142.21	Jury Assembly	2600	11	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.72	4,461.6	$539.85	11	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.95	2459.6	$297.61	$100.00	$1,100.00	0.77	2002	$242.24	4.54
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$32.72	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.11		2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Computer Access - Side Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	$196.31	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
121.15	Sink/ Coffee Area	2600	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.08	202.8	$24.54	1	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.06	150.8	$18.25	$100.00	$100.00	0.02	52	$6.29	15.89
227.21	Restrooms	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	$36.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copier Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$65.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
Misc.																						
121.14	Mail Room	2600	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.23	608.4	$73.62	3	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.17	452.4	$54.74	$100.00	$300.00	0.06	156	$18.88	15.89
221.14		2600	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	150.8	$18.25	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Phone/ Servers Room	1200	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	249.6	$30.20	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Photo ID Room	1200	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	249.6	$30.20	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
221.34	Boiler Room	8760	17	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.99	8,637.4	$1,045.12	17	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
613	Tunnel	8760	2	1	"Keyless" Socket w/Wire Cage, 100w A19 Lamp	100	0.20	1,752.0	$211.99	2	1	(1) 26w CFL Lamp	26	0.05	455.52	$55.12	$20.00	$40.00	0.15	1296.48	$156.87	0.25
242.21	Boiler Room Office	4400	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	915.2	$110.74	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Empty Office/ Office Supplies	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	$196.31	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Coffee Shop	4400	5	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.78	3,432.0	$415.27	5	3	3 Lamp , 32w T8, Elect. Ballast Specular Reflector; retrofit	86	0.43	1892	$228.93	$100.00	$500.00	0.35	1540	$186.34	2.68

Investment Grade Lighting Audit

121.21	Coffee Shop	4400	12	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.94	4,118.4	$498.33	12	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.70	3062.4	$370.55	$100.00	$1,200.00	0.24	1056	$127.78	9.39
111.14	Coffee Shop Storage	4400	2	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.10	422.4	$51.11	2	1	1 Lamp, 32w T8, Elect. Ballast; retrofit	30	0.06	264	$31.94	$80.00	$160.00	0.04	158.4	$19.17	8.35
227.21	Corridor Outside Coffee Shop	4400	3	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.17	765.6	$92.64	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
121.11	Inside Stairwell	4400	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.23	1,029.6	$124.58	3	2	2 Lamp, 32w T8, Elect. Ballast; retrofit	58	0.17	765.6	$92.64	$100.00	$300.00	0.06	264	$31.94	9.39
242.21	IT Ground Floor Offices	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$458.06	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
221.11	Server Room	2600	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	58	0.23	603.2	$72.99	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
	Totals		1,073	620			79.40	247,466	$29,943	1,073	120			13.1	43,588	$5,274		$20,875	7.6	25,874	$3,131	6.67

NOTES: 1. Simple Payback noted in this spreadsheet does not include Maintenance Savings and NJ Smart Start Incentives.
2. Lamp totals only include T-12 tube replacement calculations

CEG Job #: 9C10048
Project: Burlington County
Address: 49 Rancocas Road
Mount Holly, NJ
Building SF: 225,400

County Office Building

KWH COST: $0.121

ECM #10: 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
Suite 355 Human Resoures																							
242.21	Conference Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$130.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.37	10%	973.44	$117.79	$75.00	$75.00	0.04	108.16	$13.09	5.73
2		2600	10	2	Recessed Down Light, (2) 26w PL Lamp	54	0.54	1404	$169.88	10	1	Dual Technology Occupancy Sensor - Switch Mnt.	54	0.49	10%	1263.6	$152.90	$75.00	$75.00	0.05	140.4	$16.99	4.41
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
2		2600	6	2	Recessed Down Light, (2) 26w PL Lamp	54	0.324	842.4	$101.93	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	54	0.29	10%	758.16	$91.74	$75.00	$75.00	0.03	84.24	$10.19	7.36
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Open Office/Files	2600	9	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.936	2433.6	$294.47	9	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	0.84	10%	2190.24	$265.02	$160.00	$160.00	0.09	243.36	$29.45	5.43
227.21		2600	12	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.696	1809.6	$218.96	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.63	10%	1628.64	$197.07	$160.00	$160.00	0.07	180.96	$21.90	7.31
Suite 354 Civil																							
242.21	Office	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$98.16	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Open Office	2600	22	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.288	5948.8	$719.80	22	2	Dual Technology Occupancy Sensor - Remote Mnt.	104	2.06	10%	5353.92	$647.82	$160.00	$320.00	0.23	594.88	$71.98	4.45
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
Common																							
211.12	3rd Floor Corridor	4400	12	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	0.36	1584	$191.66	12	0	No Change	30	0.36	0%	1584	$191.66	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	2	2	(2) 7w CFL Exit Sign	16	0.032	280.32	$33.92	2	0	No Change	16	0.03	0%	280.32	$33.92	$0.00	$0.00	0.00	0	$0.00	0.00
121.11	Stairwell	8760	10	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.78	6832.8	$826.77	10	0	No Change	78	0.78	0%	6832.8	$826.77	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	3rd Floor Men's Restroom	4400	5	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.39	1716	$207.64	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.35	10%	1544.4	$186.87	$75.00	$75.00	0.04	171.6	$20.76	3.01
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.078	343.2	$41.53	1			78	0.07	10%	308.88	$37.37	$0.00	$0.00	0.01	34.32	$4.15	0.00
121.11	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.078	93.6	$11.33	1	0	No Change	78	0.08	0%	93.6	$11.33	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	3rd Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	457.6	$55.37	1	1	Dual Technology Occupancy Sensor	104	0.09	10%	411.84	$49.83	$75.00	$75.00	0.01	45.76	$5.54	4.10

111.14		4400	5	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.24	1056	$127.78	5	1	Occupancy Sensor - Switch Mnt.	48	0.22	10%	950.4	$115.00	$0.00	$0.00	0.02	105.6	$12.78	0.00
Suite 315																							
242.21		2600	10	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.04	2704	$327.18	10	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	0.94	10%	2433.6	$294.47	$160.00	$160.00	0.10	270.4	$32.72	4.89
142.21	Open Office	2600	11	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.716	4461.6	$539.85	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	156	1.54	10%	4015.44	$485.87	$160.00	$160.00	0.17	446.16	$53.99	2.87
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	$18.25	1			58	0.05	10%	135.72	$16.42	$0.00	$0.00	0.01	15.08	$1.82	0.00
Common																							
121.11	Stairwell	8760	8	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.624	5466.24	$661.42	8	0	No Change	78	0.62	0%	5466.24	$661.42	$0.00	$0.00	0.00	0	$0.00	0.00
211.12	2nd Floor Corridor	4400	104	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	3.12	13728	$1,661.09	104	0	No Change	30	3.12	0%	13728	$1,661.09	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	4	2	(2) 7w CFL Exit Sign	16	0.064	560.64	$67.84	4	0	No Change	16	0.06	0%	560.64	$67.84	$0.00	$0.00	0.00	0	$0.00	0.00
Solicitor's Offices																							
242.21	Conference Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$130.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.37	10%	973.44	$117.79	$75.00	$75.00	0.04	108.16	$13.09	5.73
242.21	Copy Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	7.36
227.21		2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	$36.49	2			58	0.10	10%	271.44	$32.84	$0.00	$0.00	0.01	30.16	$3.65	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Corner Office	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.09	10%	243.36	$29.45	$75.00	$75.00	0.01	27.04	$3.27	7.45
2		2600	4	2	Recessed Down Light, (2) 26w PL Lamp	54	0.216	561.6	$67.95	4			54	0.19	10%	505.44	$61.16	$0.00	$0.00	0.02	56.16	$6.80	0.00
242.21	Copy Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
2		2600	3	2	Recessed Down Light, (2) 26w PL Lamp	54	0.162	421.2	$50.97	3	0	No Change	54	0.16	0%	421.2	$50.97	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Break Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Files/Work Station Area	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$130.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.37	10%	973.44	$117.79	$75.00	$75.00	0.04	108.16	$13.09	5.73
227.21	Hall/Reception Area	2600	9	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.522	1357.2	$164.22	9	0	No Change	58	0.52	0%	1357.2	$164.22	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Open Office/File Area	2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	603.2	$72.99	4	0	No Change	58	0.23	0%	603.2	$72.99	$0.00	$0.00	0.00	0	$0.00	0.00
242.21		2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.872	4867.2	$588.93	18	2	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.68	10%	4380.48	$530.04	$160.00	$320.00	0.19	486.72	$58.89	5.43
Common																							
221.14		4400	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.116	510.4	$61.76	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.10	10%	459.36	$55.58	$75.00	$75.00	0.01	51.04	$6.18	12.14

121.14	2nd Floor Men's Restroom	4400	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.234	1029.6	$124.58	3	0	No Change	78	0.23	0%	1029.6	$124.58	$0.00	$0.00	0.00	0	$0.00	0.00
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.078	343.2	$41.53	1	0	No Change	78	0.08	0%	343.2	$41.53	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.078	93.6	$11.33	1	0	No Change	78	0.08	0%	93.6	$11.33	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	2nd Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	457.6	$55.37	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.09	10%	411.84	$49.83	$75.00	$75.00	0.01	45.76	$5.54	13.55
111.14		4400	2	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.096	422.4	$51.11	2	0	No Change	48	0.10	0%	422.4	$51.11	$0.00	$0.00	0.00	0	$0.00	0.00
121.14		4400	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.234	1029.6	$124.58	3	0	No Change	78	0.23	0%	1029.6	$124.58	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 222 IT Department																							
242.21	Open Office	2600	22	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.288	5948.8	$719.80	22	2	Dual Technology Occupancy Sensor - Remote Mnt.	104	2.06	10%	5353.92	$647.82	$160.00	$320.00	0.23	594.88	$71.98	4.45
227.21	IT Room	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	$36.49	2	0	No Change	58	0.12	0%	301.6	$36.49	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Conference Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$130.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.37	10%	973.44	$117.79	$75.00	$75.00	0.04	108.16	$13.09	5.73
242.21	End Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
Suite 202 Sherrif																							
2	Sherrif's Office	2600	5	2	Recessed Down Light, (2) 26w PL Lamp	54	0.27	702	$84.94	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	54	0.24	10%	631.8	$76.45	$75.00	$75.00	0.03	70.2	$8.49	8.83
242.21		2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
227.21		2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	603.2	$72.99	4	0	No Change	58	0.23	0%	603.2	$72.99	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Sherrif's File/Reception Area	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	0	No Change	104	0.21	0%	540.8	$65.44	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Undersherrif - Vanderbilt	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
2		2600	2	2	Recessed Down Light, (2) 26w PL Lamp	54	0.108	280.8	$33.98	2	0	No Change	54	0.11	0%	280.8	$33.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Undersherrif - Sano	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	$18.25	1	0	No Change	58	0.06	0%	150.8	$18.25	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Open Office/Files	2600	20	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.08	5408	$654.37	20	2	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.87	10%	4867.2	$588.93	$160.00	$320.00	0.21	540.8	$65.44	4.89
242.21	D/SGT Office	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$98.16	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	$18.25	1	0	No Change	58	0.06	0%	150.8	$18.25	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Interrogation	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Break Room	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Front Desk	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$98.16	3	0	No Change	104	0.31	0%	811.2	$98.16	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Civil Processing Unit	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1352	$163.59	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.47	10%	1216.8	$147.23	$75.00	$75.00	0.05	135.2	$16.36	4.58
Suite 204 Prosecutor's Tech. Services Unit																							

242.21	Processing Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	$18.25	1	0	No Change	58	0.06	0%	150.8	$18.25	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Processing/ Storage	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Open Office	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$392.62	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.12	10%	2920.32	$353.36	$160.00	$160.00	0.12	324.48	$39.26	4.08
227.21		2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	$36.49	2	0	No Change	58	0.12	0%	301.6	$36.49	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Evidence Holding	1200	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	139.2	$16.84	2	0	No Change	58	0.12	0%	139.2	$16.84	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 211 Sherrif's Interrogation																							
242.21	Open Office	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	$196.31	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	0.56	10%	1460.16	$176.68	$160.00	$160.00	0.06	162.24	$19.63	8.15
227.21		2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	$36.49	2	0	No Change	58	0.12	0%	301.6	$36.49	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Files/Storage	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	$36.49	2	0	No Change	58	0.12	0%	301.6	$36.49	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Hall/Copy Area	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	0	No Change	104	0.21	0%	540.8	$65.44	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	File Storage Room	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Dectective Sergant Office	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	K9 Office	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
Common																							
211.12	1st Floor Corridor	4400	94	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	2.82	12408	$1,501.37	94	0	No Change	30	2.82	0%	12408	$1,501.37	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	4	2	(2) 7w CFL Exit Sign	16	0.064	560.64	$67.84	4	0	No Change	16	0.06	0%	560.64	$67.84	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		4400	13	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.754	3317.6	$401.43	13	0	No Change	58	0.75	0%	3317.6	$401.43	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	1st Floor Men's Restroom	4400	5	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.39	1716	$207.64	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.35	10%	1544.4	$186.87	$75.00	$75.00	0.04	171.6	$20.76	3.61
127.21		4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.078	343.2	$41.53	1	0	No Change	78	0.08	0%	343.2	$41.53	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.078	93.6	$11.33	1	0	No Change	78	0.08	0%	93.6	$11.33	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	1st Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	457.6	$55.37	1	0	No Change	104	0.10	0%	457.6	$55.37	$0.00	$0.00	0.00	0	$0.00	0.00
111.14		4400	5	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.24	1056	$127.78	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	48	0.22	10%	950.4	$115.00	$75.00	$75.00	0.02	105.6	$12.78	5.87
Board Room																							
121.21	Board Room	1200	24	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	1.872	2246.4	$271.81	24	0	No Change	78	1.87	0%	2246.4	$271.81	$0.00	$0.00	0.00	0	$0.00	0.00
121.11	Side Office	1200	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.312	374.4	$45.30	4	0	No Change	78	0.31	0%	374.4	$45.30	$0.00	$0.00	0.00	0	$0.00	0.00
121.11	Side Office	1200	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.312	374.4	$45.30	4	0	No Change	78	0.31	0%	374.4	$45.30	$0.00	$0.00	0.00	0	$0.00	0.00
121.11	Side Office	1200	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.312	374.4	$45.30	4	0	No Change	78	0.31	0%	374.4	$45.30	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 123 Freeholders																							
121.11	Side Office	2600	6	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.468	1216.8	$147.23	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.42	10%	1095.12	$132.51	$75.00	$75.00	0.05	121.68	$14.72	5.09

121.11	Side Office	2600	6	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.468	1216.8	$147.23	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.42	10%	1095.12	$132.51	$75.00	$75.00	0.05	121.68	$14.72	5.09
121.11	Side Office	2600	4	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.312	811.2	$98.16	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
221.21	Hall	2600	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Acrylic Lens	58	0.348	904.8	$109.48	6	0	No Change	58	0.35	0%	904.8	$109.48	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Reception/ Open Office	2600	8	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.832	2163.2	$261.75	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	0.75	10%	1946.88	$235.57	$160.00	$160.00	0.08	216.32	$26.17	6.11
Suite 108 Freeholder's Staff																							
142.21	Side Office	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.312	811.2	$98.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
142.21	Coffee/Copy Area	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.312	811.2	$98.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	Conference Room	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.312	811.2	$98.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
242.21		2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	0	No Change	104	0.21	0%	540.8	$65.44	$0.00	$0.00	0.00	0	$0.00	0.00
142.21	End Office	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.312	811.2	$98.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
142.21	Open Office/Files	2600	8	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.248	3244.8	$392.62	8	0	No Change	156	1.25	0%	3244.8	$392.62	$0.00	$0.00	0.00	0	$0.00	0.00
Suite 111 IT																							
242.21	Open Office	2600	13	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.352	3515.2	$425.34	13	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.22	10%	3163.68	$382.81	$160.00	$160.00	0.14	351.52	$42.53	3.76
231.21	IT Dept.	2600	9	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.522	1357.2	$164.22	9	0	No Change	58	0.52	0%	1357.2	$164.22	$0.00	$0.00	0.00	0	$0.00	0.00
231.21	Server Room	2600	15	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	58	0.87	2262	$273.70	15	0	No Change	58	0.87	0%	2262	$273.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Office	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1352	$163.59	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.47	10%	1216.8	$147.23	$75.00	$75.00	0.05	135.2	$16.36	4.58
242.21	Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Conf. Rm/ Office	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$98.16	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
Suite 107 Insurance & Risk Management																							
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Conference Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46

242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
2		2600	3	2	Recessed Down Light, (2) 26w PL Lamp	54	0.162	421.2	$50.97	3	0	No Change	54	0.16	0%	421.2	$50.97	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	End Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Open Office/Files	2600	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.144	2974.4	$359.90	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.03	10%	2676.96	$323.91	$160.00	$160.00	0.11	297.44	$35.99	4.45
242.21	Open Office/Files	2600	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.144	2974.4	$359.90	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.03	10%	2676.96	$323.91	$160.00	$160.00	0.11	297.44	$35.99	4.45
227.21		2600	3	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.174	452.4	$54.74	3	0	No Change	58	0.17	0%	452.4	$54.74	$0.00	$0.00	0.00	0	$0.00	0.00
2		2600	3	2	Recessed Down Light, (2) 26w PL Lamp	54	0.162	421.2	$50.97	3	0	No Change	54	0.16	0%	421.2	$50.97	$0.00	$0.00	0.00	0	$0.00	0.00
Finance																							
242.21	Open Office/Files	2600	15	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.56	4056	$490.78	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.40	10%	3650.4	$441.70	$160.00	$160.00	0.16	405.6	$49.08	3.26
227.21		2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	603.2	$72.99	4	0	No Change	58	0.23	0%	603.2	$72.99	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
Common																							
227.21	Ground Floor Corridor	4400	9	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.522	2296.8	$277.91	9	0	No Change	58	0.52	0%	2296.8	$277.91	$0.00	$0.00	0.00	0	$0.00	0.00
211.14		4400	88	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Parabolic Lens	30	2.64	11616	$1,405.54	88	0	No Change	30	2.64	0%	11616	$1,405.54	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	4	2	(2) 7w CFL Exit Sign	16	0.064	560.64	$67.84	4	0	No Change	16	0.06	0%	560.64	$67.84	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	Ground Floor Men's Restroom	4400	5	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.39	1716	$207.64	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.35	10%	1544.4	$186.87	$75.00	$75.00	0.04	171.6	$20.76	3.61
127.21	0	4400	1	2	2x2, 2 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.078	343.2	$41.53	1	0	No Change	78	0.08	0%	343.2	$41.53	$0.00	$0.00	0.00	0	$0.00	0.00
121.14	Custodial Closet	1200	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.078	93.6	$11.33	1	0	No Change	78	0.08	0%	93.6	$11.33	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Ground Floor Women's Restroom	4400	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	457.6	$55.37	1	0	No Change	104	0.10	0%	457.6	$55.37	$0.00	$0.00	0.00	0	$0.00	0.00
111.14		4400	5	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.24	1056	$127.78	5	1	Dual Technology Occupancy Sensor - Switch Mnt.	48	0.22	10%	950.4	$115.00	$75.00	$75.00	0.02	105.6	$12.78	5.87
Print Shop																							
142.11	Print Shop Pick Up	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
242.21	Print Shop	2600	8	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.832	2163.2	$261.75	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	0.75	10%	1946.88	$235.57	$160.00	$160.00	0.08	216.32	$26.17	6.11

242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Rear Printing Area	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
227.21	Hall/ Paper Storage	2600	3	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.174	452.4	$54.74	3	0	No Change	58	0.17	0%	452.4	$54.74	$0.00	$0.00	0.00	0	$0.00	0.00
601		8760	1	2	(2) 7w CFL Exit Sign	16	0.016	140.16	$16.96	1	0	No Change	16	0.02	0%	140.16	$16.96	$0.00	$0.00	0.00	0	$0.00	0.00
Suite G22 Board Of Elections																							
242.21	Open Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	0	No Change	104	0.21	0%	540.8	$65.44	$0.00	$0.00	0.00	0	$0.00	0.00
142.21		2600	13	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	2.028	5272.8	$638.01	13	1	Dual Technology Occupancy Sensor - Remote Mnt.	156	1.83	10%	4745.52	$574.21	$160.00	$160.00	0.20	527.28	$63.80	2.51
142.211	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
142.211	Side Office	2600	1	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.156	405.6	$49.08	1	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.14	10%	365.04	$44.17	$75.00	$75.00	0.02	40.56	$4.91	15.28
142.21	Mail Room/ Storage Area	2600	2	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.312	811.2	$98.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	156	0.28	10%	730.08	$88.34	$75.00	$75.00	0.03	81.12	$9.82	7.64
Jury Room																							
142.21	Jury Assembly	2600	11	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	1.716	4461.6	$539.85	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	156	1.54	10%	4015.44	$485.87	$160.00	$160.00	0.17	446.16	$53.99	2.96
242.21		2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$32.72	1	0	No Change	104	0.10	0%	270.4	$32.72	$0.00	$0.00	0.00	0	$0.00	0.00
242.11		2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	0	No Change	104	0.21	0%	540.8	$65.44	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Computer Access - Side Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Open Office	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	$196.31	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	0.56	10%	1460.16	$176.68	$160.00	$160.00	0.06	162.24	$19.63	8.15
121.15	Sink/ Coffee Area	2600	1	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.078	202.8	$24.54	1	0	No Change	78	0.08	0%	202.8	$24.54	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Restrooms	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	$36.49	2	0	No Change	58	0.12	0%	301.6	$36.49	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Side Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Corner Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
242.21	Copier Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$65.44	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	$58.89	$75.00	$75.00	0.02	54.08	$6.54	11.46
Misc.																							
121.14	Mail Room	2600	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	78	0.234	608.4	$73.62	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	78	0.21	10%	547.56	$66.25	$75.00	$75.00	0.02	60.84	$7.36	10.19
221.14		2600	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.058	150.8	$18.25	1	0	No Change	58	0.06	0%	150.8	$18.25	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Phone/ Servers Room	1200	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	249.6	$30.20	2	0	No Change	104	0.21	0%	249.6	$30.20	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Photo ID Room	1200	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	249.6	$30.20	2	0	No Change	104	0.21	0%	249.6	$30.20	$0.00	$0.00	0.00	0	$0.00	0.00
221.34	Boiler Room	8760	17	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.986	8637.36	$1,045.12	17	0	No Change	58	0.99	0%	8637.36	$1,045.12	$0.00	$0.00	0.00	0	$0.00	0.00
613	Tunnel	8760	2	1	"Keyless" Socket w/Wire Cage, 100w A19 Lamp	100	0.2	1752	$211.99	2	0	No Change	100	0.20	0%	1752	$211.99	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boiler Room Office	4400	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	915.2	$110.74	2	0	No Change	104	0.21	0%	915.2	$110.74	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Empty Office/ Office Supplies	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	$196.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.56	10%	1460.16	$176.68	$75.00	$75.00	0.06	162.24	$19.63	3.82

142.21	Coffee Shop	4400	5	4	2x4, 4 Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	156	0.78	3432	$415.27	5	0	No Change	156	0.78	0%	3432	$415.27	$0.00	$0.00	0.00	0	$0.00	0.00
121.21		4400	12	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Recessed Mnt., Prismatic Lens	78	0.936	4118.4	$498.33	12	0	No Change	78	0.94	0%	4118.4	$498.33	$0.00	$0.00	0.00	0	$0.00	0.00
111.14	Coffee Shop Storage	4400	2	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., No Lens	48	0.096	422.4	$51.11	2	0	No Change	48	0.10	0%	422.4	$51.11	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Corridor Outside Coffee Shop	4400	3	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.174	765.6	$92.64	3	0	No Change	58	0.17	0%	765.6	$92.64	$0.00	$0.00	0.00	0	$0.00	0.00
121.11	Inside Stairwell	4400	3	2	1x4, 2-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	78	0.234	1029.6	$124.58	3	0	No Change	78	0.23	0%	1029.6	$124.58	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	IT Ground Floor Offices	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$458.06	14	1	Dual Technology Occupancy Sensor - Remote Mnt.	104	1.31	10%	3407.04	$412.25	$160.00	$160.00	0.15	378.56	$45.81	3.49
221.11	Server Room	2600	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	58	0.232	603.2	$72.99	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.21	10%	542.88	$65.69	$75.00	$75.00	0.02	60.32	$7.30	10.28
	Totals		1,073	620			79.4	247,466.0	$29,943	1,073	115			74.3		233,834.5	$28,293.98		$10,665	5.08	13,631	$1,649	6.47

Project Name: LGEA Solar PV Project - Burlington County - County Offices & Courts
Location: Burlington, NJ
Description: Photovoltaic System 95% Financing - 25 year

Simple Payback Analysis

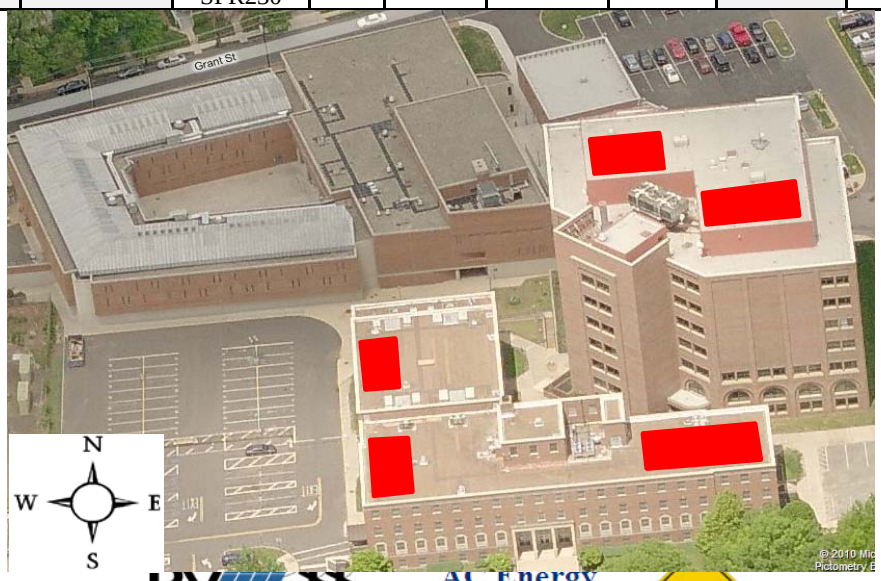
	Photovoltaic System 95% Financing - 25 year
Total Construction Cost	$513,360
Annual kWh Production	73,423
Annual Energy Cost Reduction	$8,884
Annual SREC Revenue	$25,698
First Cost Premium	**$513,360**
Simple Payback:	**14.84** **Years**

Life Cycle Cost Analysis

Analysis Period (years):	25	Financing %:	0%
Financing Term (mths):	0	Maintenance Escalation Rate:	3.0%
Average Energy Cost ($/kWh)	**$0.121**	Energy Cost Escalation Rate:	3.0%
Financing Rate:	0.00%	SREC Value ($/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	$513,360	0	0	0	$0	(513,360)	0
1	$0	73,423	$8,884	$0	$25,698	$34,582	($478,778)
2	$0	73,056	$9,151	$0	$25,570	$34,720	($444,057)
3	$0	72,691	$9,425	$0	$25,442	$34,867	($409,191)
4	$0	72,327	$9,708	$0	$25,315	$35,022	($374,168)
5	$0	71,966	$9,999	$741	$25,188	$34,446	($339,722)
6	$0	71,606	$10,299	$738	$25,062	$34,624	($305,098)
7	$0	71,248	$10,608	$734	$24,937	$34,811	($270,287)
8	$0	70,891	$10,926	$730	$24,812	$35,008	($235,279)
9	$0	70,537	$11,254	$727	$24,688	$35,216	($200,064)
10	$0	70,184	$11,592	$723	$24,564	$35,433	($164,630)
11	$0	69,833	$11,940	$719	$24,442	$35,662	($128,968)
12	$0	69,484	$12,298	$716	$24,319	$35,902	($93,067)
13	$0	69,137	$12,667	$712	$24,198	$36,152	($56,914)
14	$0	68,791	$13,047	$709	$24,077	$36,415	($20,499)
15	$0	68,447	$13,438	$705	$23,956	$36,690	$16,191
16	$0	68,105	$13,841	$701	$23,837	$36,977	$53,167
17	$0	67,764	$14,257	$698	$23,718	$37,276	$90,443
18	$0	67,426	$14,684	$694	$23,599	$37,589	$128,032
19	$0	67,088	$15,125	$691	$23,481	$37,915	$165,946
20	$0	66,753	$15,578	$688	$23,364	$38,254	$204,201
21	$1	66,419	$16,046	$684	$23,247	$38,608	$242,809
22	$2	66,087	$16,527	$681	$23,130	$38,977	$281,786
23	$3	65,757	$17,023	$677	$23,015	$39,361	$321,147
24	$4	65,428	$17,534	$674	$22,900	$39,760	$360,906
25	$5	65,101	$18,060	$671	$22,785	$40,174	$401,081
	Totals:	1,729,549	$323,911	$14,812	$605,342	$914,441	($1,255,014)
				Net Present Value (NPV)		**$401,106**	
				Internal Rate of Return (IRR)		**4.9%**	

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
County Office & Courts	4050	Sunpower SPR230	248	14.7	3,647	57.04	73,423	8,184	15.64



PVWatts

AC Energy & Cost Savings

Cautions for Interpreting the Results

(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:	57.0 kW
DC to AC Derate Factor:	0.810
AC Rating:	46.2 kW
Array Type:	Fixed Tilt
Array Tilt:	20.0°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	11.2 ¢/kWh

Results

Month	Solar Radiation (kWh/m²/day)	AC Energy (kWh)	Energy Value ($)
1	3.00	4408	493.70
2	3.71	4922	551.26
3	4.57	6483	726.10
4	5.33	7114	796.77
5	5.84	7911	886.03
6	6.04	7610	852.32
7	6.01	7747	867.66
8	5.62	7266	813.79
9	5.10	6490	726.88
10	4.15	5590	626.08
11	3.05	4150	464.80
12	2.62	3731	417.87
Year	4.59	73423	8223.38

.= Proposed PV Layout

Notes:

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

Piping/Valve Insulation Savings

Fuel Cost ($/mmBTU):	$10.70
Operating Hours per Year:	2460
Insulation Thickness:	1"
Amb. Temp:	80

Qty.	Size	Description	Surface Temp.	Area (Ea.) (Sq.ft.)	Bare Heat Loss (BTU/Hr/SF)	Bare Heat Loss (BTU/Hr)	Bare Heat Loss mmBtu	Insulated Heat Loss (BTU/Hr/SF)	Insulated Heat Loss (BTU/Hr)	Insulated Heat Loss mmBtu	Fuel Savings mmBtu/yr	Fuel Savings $/yr
		Central Steam Plant										
4	8"	Gate Valve (Bonnet)	155	5.30	240.00	5,088.00	12.52	19.50	413.50	1.02	11.50	$123.04
3	6"	Gate Valve (Bonnet)	190	4.30	352.00	4,540.80	11.17	28.60	368.99	0.91	10.26	$109.81
1	6"	PRV	150	17.20	224.00	3,852.80	9.48	18.20	313.13	0.77	8.71	$93.17
1	6"	PRV	140	17.20	192.00	3,302.40	8.12	15.61	268.41	0.66	7.46	$79.86
1	4"	PRV	150	23.10	224.00	5,174.40	12.73	18.20	420.54	1.03	11.69	$125.13
1	4"	PRV	150	17.20	224.00	3,852.80	9.48	18.20	313.13	0.77	8.71	$93.17
2	4"	Gate Valve (Bonnet)	145	4.30	208.00	1,788.80	4.40	16.91	145.38	0.36	4.04	$43.26
1	2"	PRV	150	5.20	224.00	1,164.80	2.87	18.20	94.67	0.23	2.63	$28.17
1	2"	PRV	140	5.20	192.00	998.40	2.46	15.61	81.15	0.20	2.26	$24.14
100	6"	Supply Steam Piping	220	91.00	38.00	345,800.00	850.67	36.40	331,269.31	814.92	35.75	$382.48
120	4"	Supply Steam Piping	215	84.00	36.00	362,880.00	892.68	35.10	353,841.74	870.45	22.23	$237.91
90	2"	Supply Steam Piping	220	78.00	38.00	266,760.00	656.23	36.40	255,550.61	628.65	27.58	$295.05
145	4"	Condensate Piping	180	71.00	28.00	288,260.00	709.12	26.00	267,713.60	658.58	50.54	$540.82
120	2"	Condensate Piping	170	50.00	25.00	150,000.00	369.00	23.40	140,426.93	345.45	23.55	$251.98
		TOTAL									**226.9**	**$2,428**

BURLINGTON COUNTY OFFICES/COURTS FACILITY

DATE: 10/21/2010 REV: 2

DESCRIPTION: CONDENSATE RECEIVER/PUMP MOTOR REPLACEMENT

UNIT #	FUNCTION	BUILDING	MOTOR HP	MOTOR EFF.%	HR/DAY OPER.	ANNUAL KWh	PREMIUM EFF.%	ANNUAL KWh	ANNUAL KWh SAVINGS	$ SAV. $0.121	COND LOSS QT/MIN	ANNUAL HTG $ SAV	TOTAL $ ENERGY SAV (E&G)	EQUIP.& INST. COST	TOTAL COST NOTE 2	PAY BACK YEARS
CP-1	COND. PUMP	Boiler Rm	3	78.5%	4	3,700	85.5%	3,397	303	$37	1.00	$2,052	$2,089	$18,400	$23,000	11.0
CP-2	COND. PUMP	Boiler Rm	5	81.5%	4	5,940	86.5%	5,596	343	$42	1.25	$2,565	$2,607	$22,400	$28,000	10.7
TOTALS=										**$78**			**$ 4,695.26**		**$51,000**	10.9

NOTE 1: KWH= HP / MOTOR% * 746 /1000 * HR/DAY * 365 * 0.8(MOTOR LOAD) * 0.9 PF
NOTE 2: INCLUDES 10% FOR ENG & DESIGN + 15% FOR RETROFIT WORK
NOTE 3: SAVINGS CALCULATED ON HEATING MAKE-UP FROM 60 °F TO 200 °F AND $1.07/THERM AND 70% EFFICIENT BOILER PLANT

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	960	gpm	Efficiency	55%
Nominal head	120	ft	Max head	115 ft

Existing Flow Control

Motor and Supply Data

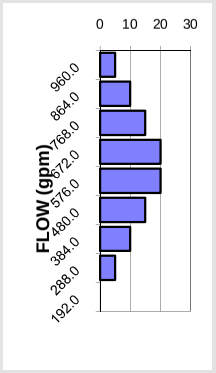
Supply voltage	460 V	440/460/480 V
Motor power	50 Hp	Required motor power: 58.3 Hp including 10% safety margin
Motor efficiency	90.7 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-078A-4

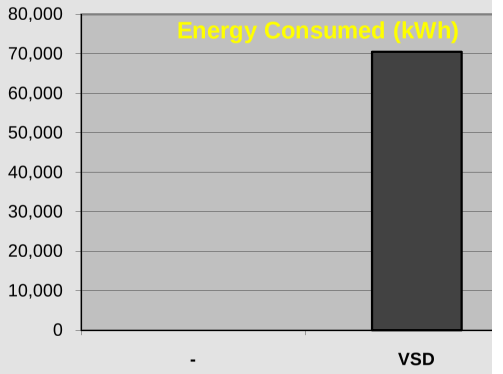
Results

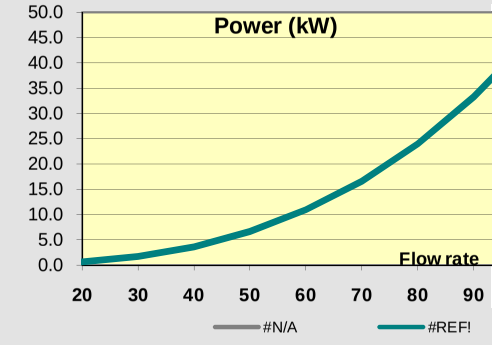
Saving percentage		
Annual energy consumption:		
with existing control method	0	MWh
with improved control method	71	MWh
Annual energy saving	-71	MWh
Annual CO_2 reduction	-35	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption





Economic Results

Annual saving	-7,053	$
Payback period	-1.4	years
Net present value	-67,210	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	960	gpm	Efficiency	75%
Nominal head	120	ft	Max head	115 ft

Existing Flow Control

Motor and Supply Data

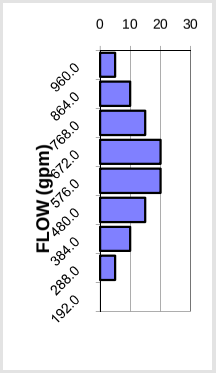
Supply voltage	460 V	440/460/480 V
Motor power	50 Hp	Required motor power: 42.7 Hp including 10% safety margin
Motor efficiency	90.7 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-078A-4

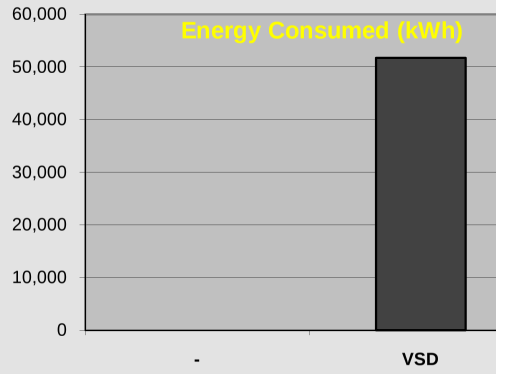
Results

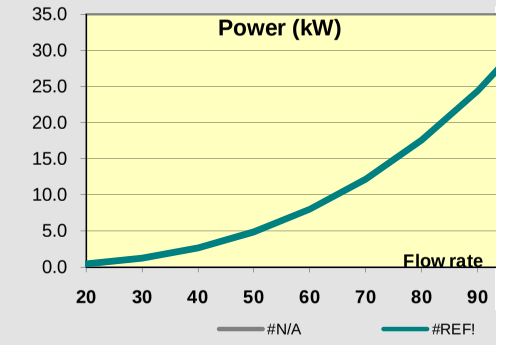
Saving percentage		
Annual energy consumption:		
with existing control method	0	MWh
with improved control method	52	MWh
Annual energy saving	-52	MWh
Annual CO_2 reduction	-26	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption





Economic Results

Annual saving	-5,173	$
Payback period	-1.9	years
Net present value	-51,954	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	334	gpm	Efficiency	55%
Nominal head	115	ft	Max head	115 ft

Existing Flow Control

Motor and Supply Data

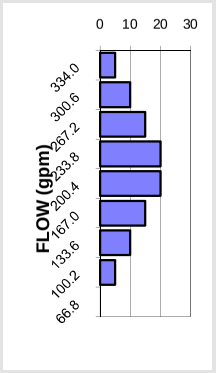
Supply voltage	460 V	440/460/480 V
Motor power	20 Hp	Required motor power: 19.4 Hp including 10% safety margin
Motor efficiency	86.0 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-031A-4

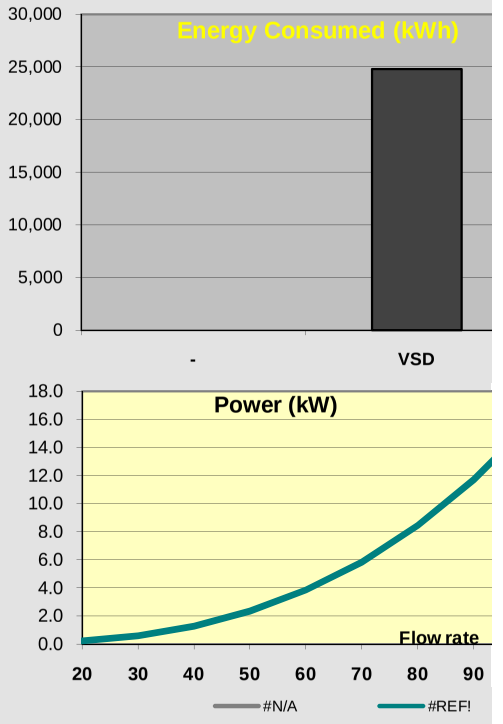
Results

Saving percentage		
Annual energy consumption:		
with existing control method		MWh
with improved control method	25	MWh
Annual energy saving	-25	MWh
Annual CO_2 reduction	-12	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption



Economic Results

Annual saving	-2,481	$
Payback period	-4.0	years
Net present value	-30,124	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	334	gpm	Efficiency	75%
Nominal head	115	ft	Max head	115 ft

Existing Flow Control

Motor and Supply Data

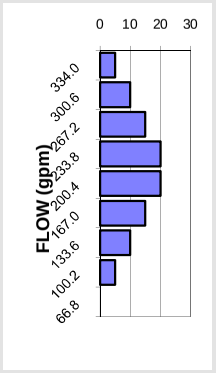
Supply voltage	460 V	440/460/480 V
Motor power	20 Hp	Required motor power: 14.3 Hp including 10% safety margin
Motor efficiency	86.0 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-031A-4

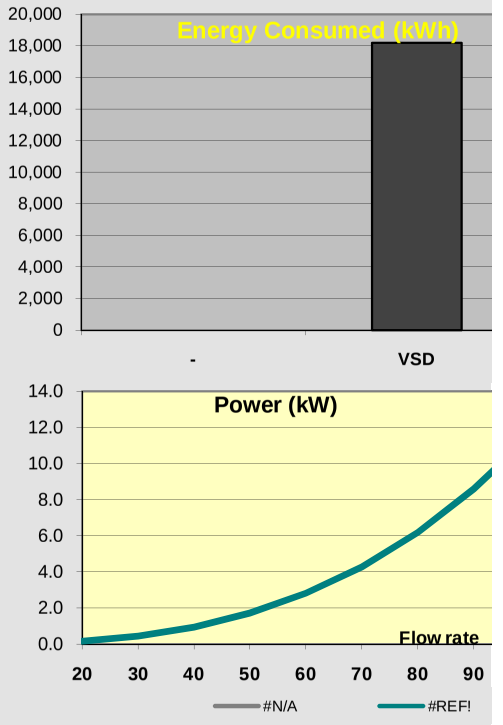
Results

Saving percentage		
Annual energy consumption:		
with existing control method	0	MWh
with improved control method	18	MWh
Annual energy saving	-18	MWh
Annual CO_2 reduction	-9	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption



Economic Results

Annual saving	-1,819	$
Payback period	-5.5	years
Net present value	-24,758	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	200	gpm	Efficiency	55%
Nominal head	50	ft	Max head	50 ft

Existing Flow Control

Motor and Supply Data

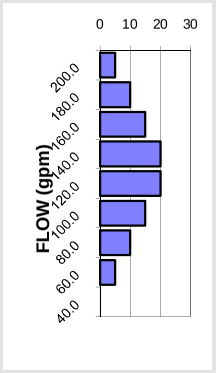
Supply voltage	460 V	440/460/480 V
Motor power	5 Hp	Required motor power: 5.1 Hp including 10% safety margin
Motor efficiency	81.5 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-08A8-4

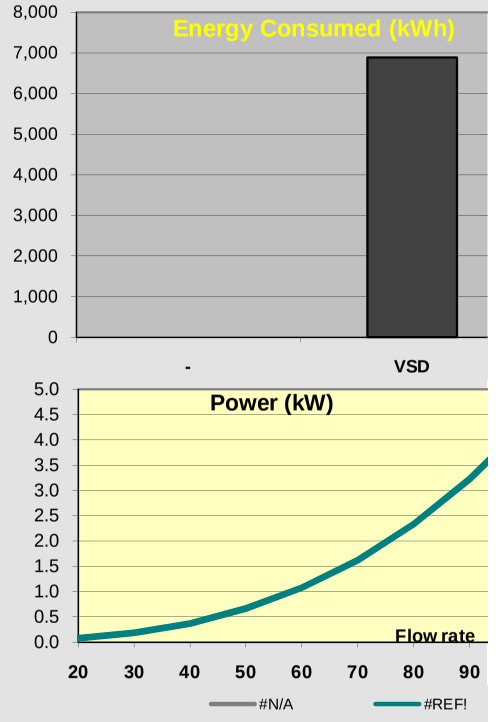
Results

Saving percentage		
Annual energy consumption:		
with existing control method	0	MWh
with improved control method	7	MWh
Annual energy saving	-7	MWh
Annual CO_2 reduction	-3	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption



Economic Results

Annual saving	-689	$
Payback period	-14.5	years
Net present value	-15,585	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	200	gpm	Efficiency	75%
Nominal head	50	ft	Max head	50 ft

Existing Flow Control

Motor and Supply Data

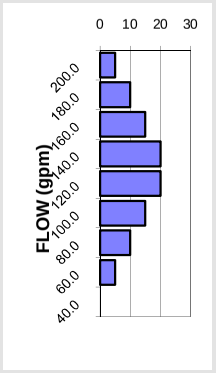
Supply voltage	460 V	440/460/480 V
Motor power	5 Hp	Required motor power: 3.7 Hp including 10% safety margin
Motor efficiency	81.5 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-08A8-4

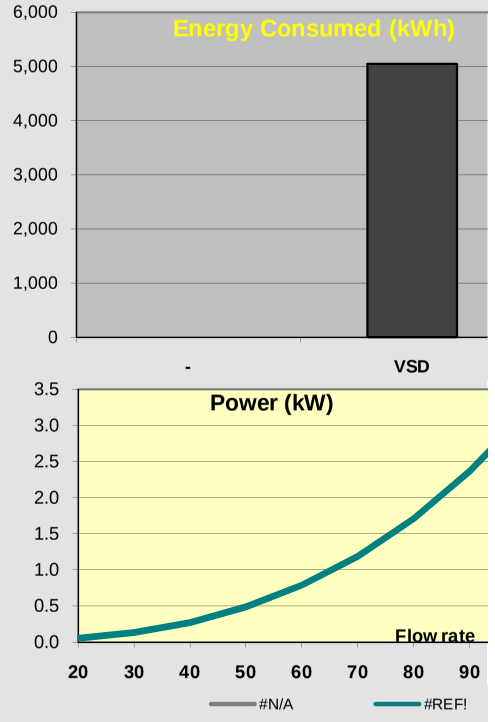
Results

Saving percentage		
Annual energy consumption:		
with existing control method	0	MWh
with improved control method	5	MWh
Annual energy saving	-5	MWh
Annual CO_2 reduction	-3	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption



Economic Results

Annual saving	-505	$
Payback period	-19.8	years
Net present value	-14,096	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	705	gpm	Efficiency	55%
Nominal head	80	ft	Max head	80 ft

Existing Flow Control

Motor and Supply Data

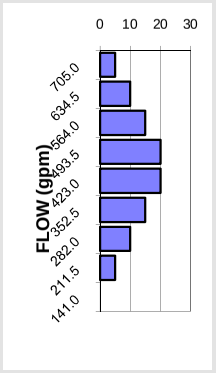
Supply voltage	460 V	440/460/480 V
Motor power	25 Hp	Required motor power: 28.5 Hp including 10% safety margin
Motor efficiency	88.5 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-044A-4

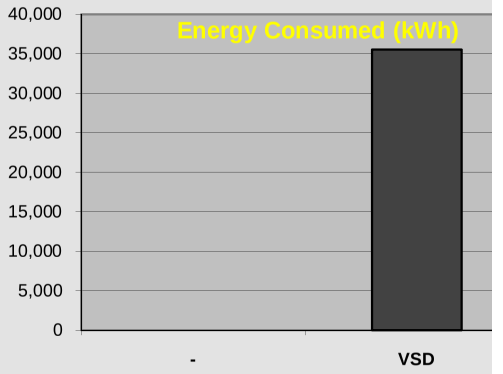
Results

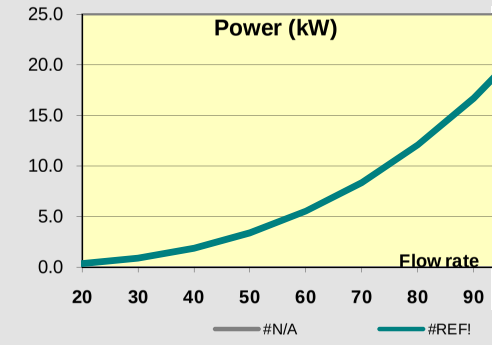
Saving percentage		
Annual energy consumption:		
with existing control method	0	MWh
with improved control method	36	MWh
Annual energy saving	-36	MWh
Annual CO_2 reduction	-18	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption





Economic Results

Annual saving	-3,552	$
Payback period	-2.8	years
Net present value	-38,814	$

11/10/2010

PumpSave 4.2 Energy saving calculator for pumps

System Data

Liquid density	62	lb/ft³	Static head	1 ft

Pump Data

Nominal volume flow	705	gpm	Efficiency	75%
Nominal head	80	ft	Max head	80 ft

Existing Flow Control

Motor and Supply Data

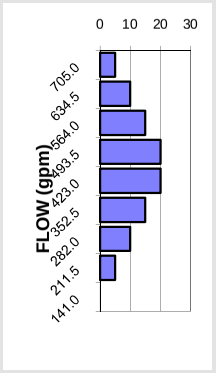
Supply voltage	460 V	440/460/480 V
Motor power	25 Hp	Required motor power: 20.9 Hp including 10% safety margin
Motor efficiency	88.5 %	

Operating Profile

Annual running time: 4,380 h

5 %	=	219 h	at nom. flow
10 %	=	438 h	at 90% flow
15 %	=	657 h	at 80% flow
20 %	=	876 h	at 70% flow
20 %	=	876 h	at 60% flow
15 %	=	657 h	at half flow
10 %	=	438 h	at 40% flow
5 %	=	219 h	at 30% flow
0 %	=	0 h	at 20% flow

100



Measurement Units

Calculated by:	
Calculated for:	
Pump ID:	

Improved Control by ABB Drive :

ACS550

ACS550-U1-044A-4

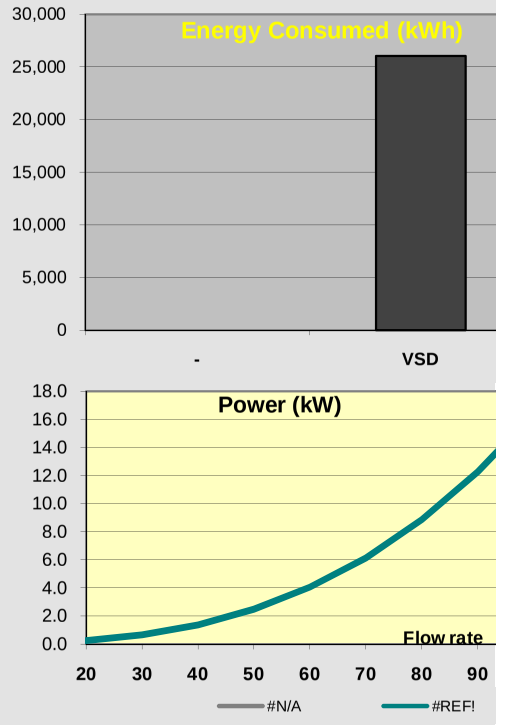
Results

Saving percentage		
Annual energy consumption:		
with existing control method		MWh
with improved control method	26	MWh
Annual energy saving	-26	MWh
Annual CO_2 reduction	-13	t
CO_2 emission/unit	0.5	lb/kWh

Economic Data

Currency unit	$	
Energy price	0.1	$/kWh
Investment cost	10,000	$
Interest rate	4%	
Service life	10	years

Energy Consumption



Economic Results

Annual saving	-2,605	$
Payback period	-3.8	years
Net present value	-31,130	$

BURLINGTON COUNTY COMPLEX

ESTIMATED STEAM COST SAVINGS FOR DOMESTIC HOT WATER PRODUCTION

DATE: 10/29/10

MONTH 2009	Monthly Steam #s for DHW	DAYS/ MONTH	AVG. HOURLY LOAD/HR.	HOURLY LOAD BHP/HR	GAS Therms at new Eff of 91%	% LOAD	GAS USE THERMS	ORIGINAL COST $	NEW COST $	SAVINGS $
JAN	93,000	31	125	3.62	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
FEB	93,000	29	134	3.87	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
MAR	93,000	31	125	3.62	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
APR	93,000	30	129	3.74	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
MAY	93,000	31	125	3.62	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
JUN	88,725	30	123	3.57	975	7.95%	1,183	$ 1,266	$ 1,043	$223
JUL	99,375	31	134	3.87	1,092	8.90%	1,325	$ 1,418	$ 1,168	$249
AUG	90,900	31	122	3.54	999	8.15%	1,212	$ 1,297	$ 1,069	$228
SEPT	93,000	30	129	3.74	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
OCT	93,000	31	125	3.62	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
NOV	93,000	30	129	3.74	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
DEC	93,000	31	125	3.62	1,022	8.33%	1,240	$ 1,327	$ 1,094	$233
Total	**1,116,000**				**12,264**	**100.00%**	**14,880**	**$15,922**	**$13,122**	**$2,799**
			Annual Steam #s at 75% Efficiency Heat Exchanger =					1,116,000		

ASSUMPTIONS: Average gas usage for the three months in the summer was 1,240 Therms/Month (Largely DHW Production)
Natural gas cost based on $1.07/therm

Energy-Efficient Products
- Federal Requirements
- Purchasing Specifications
- Product Designation Process
- Energy Cost Calculators
- FEMP Standby Power Data Center
- Model Language
- Working Group
- Resources

New & Emerging Technologies

Renewable Energy

Distributed Energy Resources/Combined Heat & Power

Energy Cost Calculator for Faucets and Showerheads

Vary utility cost, hours of operation, and /or efficiency level.

INPUT SECTION

Input the following data (if any parameter is missing, calculator will set to the default value).			Defaults	
Water Saving Product	Faucet		*Faucet*	*Showerhead*
Flow Rate	2.2	gpm	*2.2 gpm*	*2.5 gpm*
Water Cost (including waste water charges)	5.90	$/1000 gal	*$4/1000 gal*	*$4/1000 gal*
Gas Cost	1.07	$/therm	*0.60 $/therm*	*0.60 $/therm*
Electricity Cost	.12	$/kWh	*0.06 $/kWh*	*0.06 $/kWh*
Minutes per Day of Operation	30	minutes	*30 minutes*	*20 minutes*
Days per Year of Operation	365	days	*260 days*	*365 days*
Quantity to be Purchased	40	unit(s)	*1 unit*	*1 unit*

Calculate Reset

OUTPUT SECTION

Performance per Faucet	**Your Choice**	**Base Model**	**FEMP Recommended Level**	**Best Available**	**Self Closing Faucet (gallon per cycle)**
WATER USE ONLY					
Gallon per Minute	2.2 gpm	2.2	2	1.5	0.25
Annual Water Use	24090 gal	24090	21900	16425	5476
Annual Water Cost	$142	$142	$129	$97	$32
Lifetime Water Cost	$1193	$1193	$1084	$815	$269
WITH ELECTRIC WATER HEATING					
Annual Energy Use	1361 kWh	1361	1237	928	309
Annual Energy Cost	$163	$163	$148	$111	$37
Lifetime Energy Cost	$1280	$1280	$1164	$873	$291
Lifetime Energy and Water Cost Savings	$0	$0	$225	$785	$1913
Lifetime Energy and Water Cost Savings for 40 Faucet(s)	$0	$0	$9000	$31400	$76520
WITH GAS WATER HEATING					
Annual Energy Use	75 therms	75	69	51	17
Annual Energy Cost	$80	$80	$74	$55	$18
Lifetime Energy Cost	$664	$664	$614	$457	$149
Lifetime Energy and Water Cost Savings	$0	$0	$159	$585	$1439
Lifetime Energy and Water Cost Savings for 40 Faucet(s)	$0	$0	$6360	$23400	$57560

For electric water heating applications, your selection of an energy saving faucet with a flow rate of 2.2 gallon(s) per minute will have a combined energy and water cost savings (per faucet) of $ 0 over an estimated 10 year life expectancy compared to the base model.

For gas water heating applications, your selection of an energy saving faucet with a flow rate of 2.2 gallon(s) per minute will have a combined energy and water cost savings (per faucet) of $ 0 over an estimated 10 year life expectancy compared to the base model.

Assumptions

- "Base model" has an efficiency that just meets the national minimum standard for faucets or showerheads.
- Lifetime energy cost and lifetime water cost is the sum of the discounted value of the annual energy and water costs based on an assumed faucet or showerhead life of 10 years.
- Future gas and electricity price trends and a discount rate of 3.2% are based on Federal guidelines.
- $0.06 per kWh is the Federal average electricity price in the U.S.
- $0.60 per therm is the Federal average gas price in the U.S.
- The assumed combined water and waste-water price is $4.00/1000 gallons.

Disclaimer

This cost calculator is a screening tool that estimates a product's lifetime energy cost savings at various efficiency levels. Maintenance and installation costs do not vary significantly among the same product having different efficiencies; so, these costs are not included in this calculator tool. For a detailed life-cycle cost analysis, FEMP has developed a tool called Building Life-Cycle Cost (BLCC). This downloadable tool allows the user to vary interest rates, installation costs, maintenance costs, salvage values, and life expectancy for a product or an entire energy project.