MONTGOMERY TOWNSHIP SCHOOLS

VILLAGE ELEMENTARY SCHOOL

100 MAIN BLVD.
SKILLMAN, NJ 08558

FACILITY ENERGY REPORT

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I. HISTORIC ENERGY CONSUMPTION/COST

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

Electric Utility Provider:	Public Service Electric & Gas
Electric Utility Rate Structure:	Large Power & Lighting Service (LPLS)
Third Party Supplier:	South Jersey Energy Company

Natural Gas Utility Provider:	Public Service Electric & Gas
Utility Rate Structure:	Large Volume Gas (LVG)
Third Party Supplier:	Hess

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

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

Table 1
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: PSE&G
Rate: LPLS
Meter No: 778019647
Account # 42 001 836 09
Third Party Utility Provider: South Jersey Energy Company
TPS Meter / Acct No: -

MONTH OF USE	CONSUMPTION KWH	DEMAND KW	TOTAL BILL
Nov-10	61,278	310.0	$9,571
Dec-10	61,535	350.3	$9,744
Jan-11	63,771	240.2	$9,528
Feb-11	61,405	284.8	$9,371
Mar-11	71,809	335.0	$10,902
Apr-11	66,792	415.3	$10,662
May-11	86,184	517.9	$12,521
Jun-11	97,839	546.9	$18,478
Jul-11	76,201	261.7	$12,599
Aug-11	50,441	194.6	$8,756
Sep-11	147,839	454.8	$23,560
Oct-11	88,684	396.2	$12,454
Totals	**933,778**	**546.9 Max**	**$148,145**

AVERAGE DEMAND **359.0 KW average**
AVERAGE RATE **$0.159 $/kWh**

Figure 1
Electricity Usage Profile

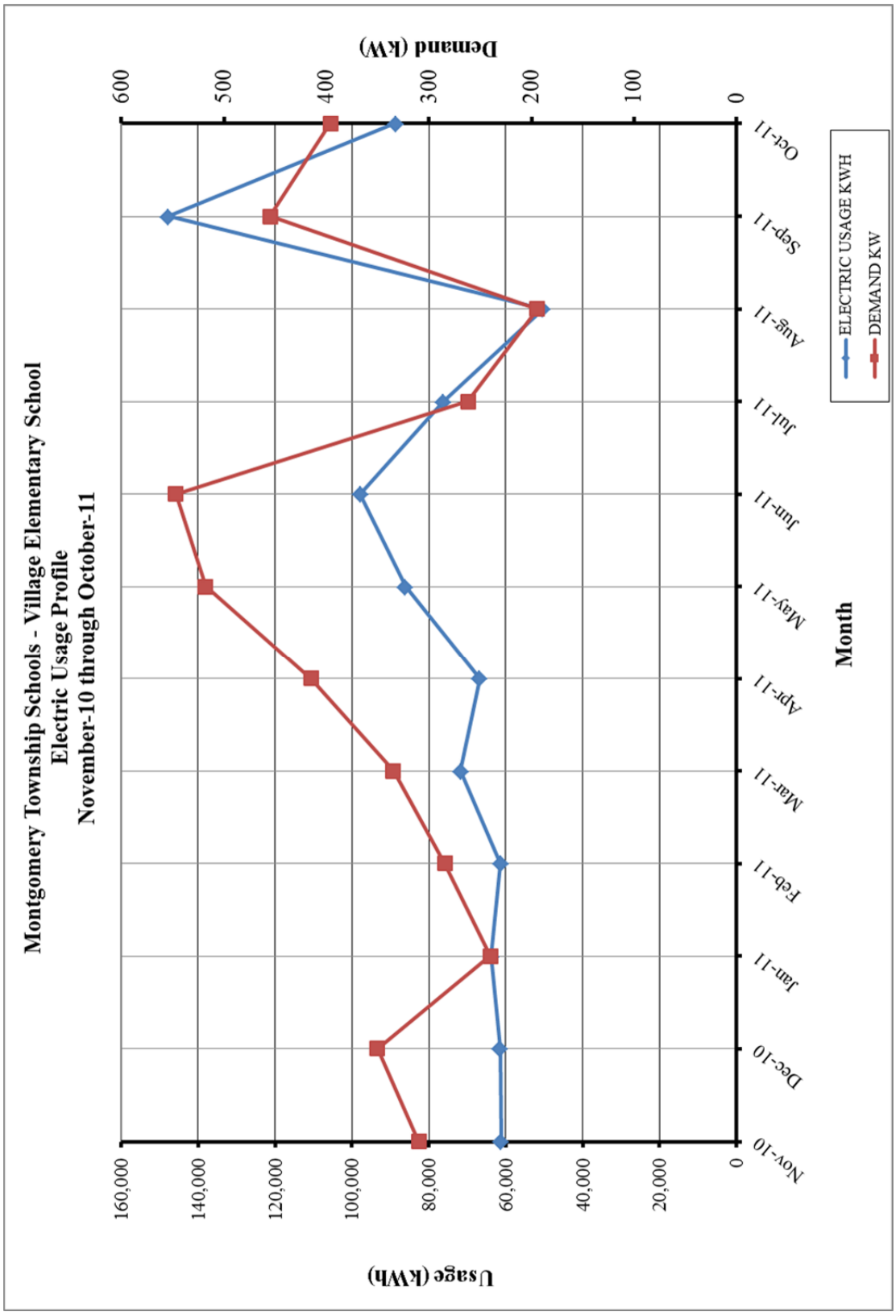
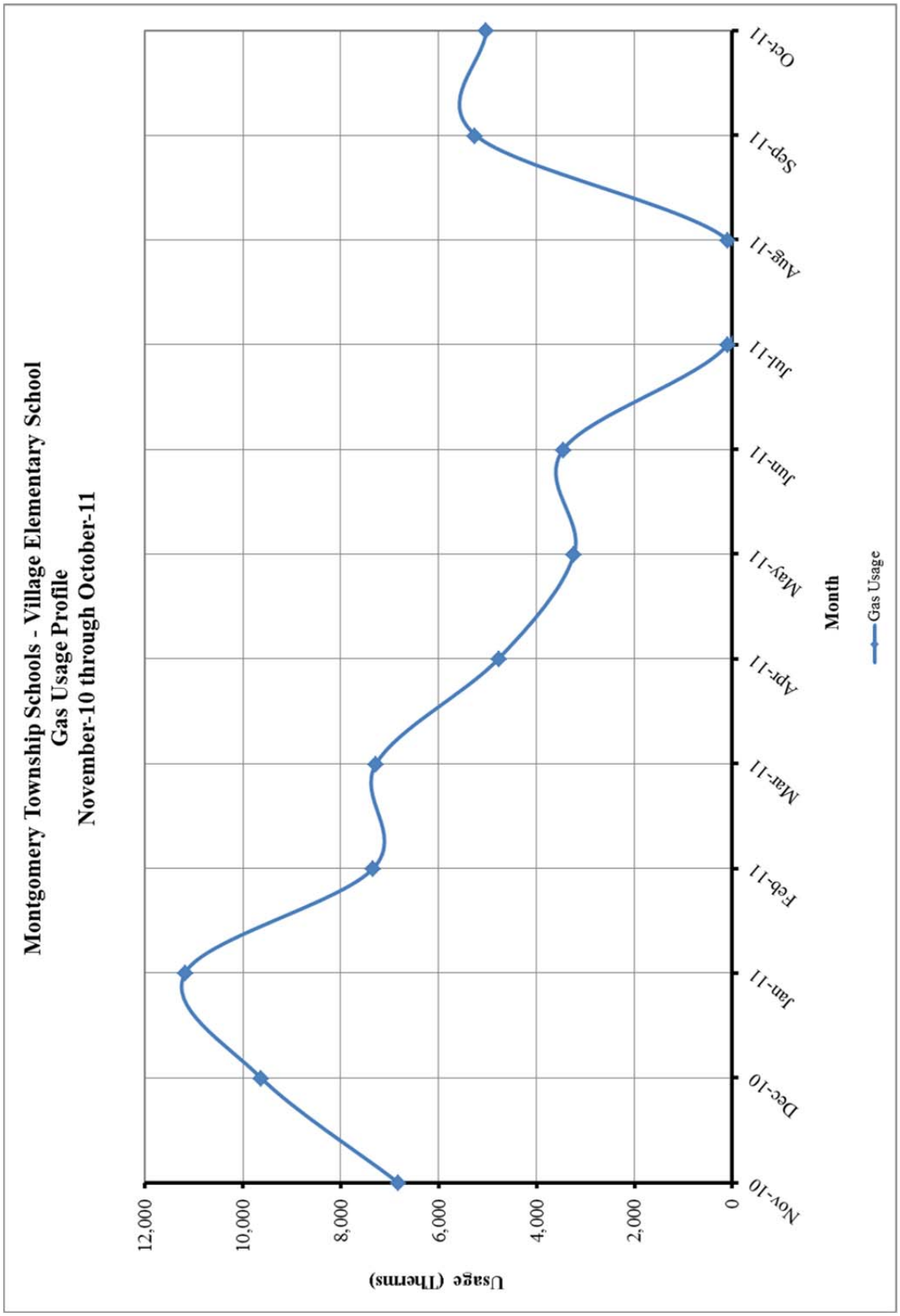


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider: PSE&G		
Rate: LVG		
Meter No: 2808481		
Account Number 65 558 218 09		
Third Party Utility Provider: HESS		
TPS Meter No: 359646/446400		
MONTH OF USE	**CONSUMPTION (THERMS)**	**TOTAL BILL**
Nov-10	6,834.00	$6,603.92
Dec-10	9,638.00	$9,025.14
Jan-11	11,182.00	$10,249.29
Feb-11	7,333.00	$7,077.20
Mar-11	7,277.00	$5,449.97
Apr-11	4,775.00	$3,570.87
May-11	3,232.00	$2,376.88
Jun-11	3,450.00	$2,515.45
Jul-11	97.00	$167.89
Aug-11	98.00	$172.88
Sep-11	5,254.00	$3,492.18
Oct-11	5,024.00	$4,764.89
TOTALS	**64,194.00**	**$55,466.56**
AVERAGE RATE:	**$0.86**	**$/THERM**

Figure 2
Natural Gas Usage Profile



II. FACILITY DESCRIPTION

The Montgomery Township Village Elementary School is located on 100 Main Blvd in Skillman, New Jersey. Phase I of the school was built in 1998 followed by Phase II in 2000. Overall building area is 87,900 SF. The Elementary School consists of classrooms, offices, gymnasium, an auditorium and cafeteria.

Occupancy Profile

The typical hours of operation for the Village Elementary School are Monday through Friday from 7:00 am to 4:00 pm for students but further occupancy occurs from 4:00 pm to 9:00 pm for after school activities and cleaning. The Village Elementary School employs approximately 100 people, with student enrollment estimated to be around 800.

Building Envelope

Exterior walls for the Elementary School facility are a light brick face with concrete block construction. The exterior wall assembly consists of 4 inches of brick, 2 inches of cavity, 1-1/2 inches of insulation and 8 inches of block. The windows throughout the School are in good condition and appear to be well maintained. Typical windows throughout facility are double pane, ¼" tinted glass with aluminum frames. The roof of the 1998 wing is mostly A-frame shingle, with a flat section over the Gym. The 2000 wing is a flat, white, single membrane roof. Insulation below the roofing is 3 inches. The insulation follows the roof slope on A-frame roofing and is below the membrane on flat roofs.

HVAC Systems

The school is served by a variety of HVAC systems, consisting of hot water boilers, rooftop packaged air handlers, self-contained unit ventilators, PTAC units and split systems. There are two boiler rooms, each with eight (8) Hydro-Therm MG-3080 boilers. The boilers are gas-fired, modular hot water units, each with inputs of 3,176 MBH and outputs of approximately 2,440 MBH with an estimated efficiency of 77%. These boilers were installed in two phases, eight (8) in 1998 and eight (8) in 2000. All the boilers are within their useful service life as defined by ASHRAE. Hot water is circulated throughout the building's heating hot water loops via two sets of pumps. Two (2) base mounted, end suction pumps serve the north wing of the school and two (2) in-line centrifugal pumps serve the south wing.

The north wing classrooms and assembly areas are served by packaged rooftop DX units with HW coils. Air is ducted to the spaces and distributed overhead. The south wing classrooms are served by self-contained DX/HW unit ventilators. Offices are served by DX/HW packaged terminal air conditioning (PTAC) units. The remaining spaces are served by indoor DX/HW air handling units with roof-mounted split system condensers.

Exhaust System

Exhaust air is ducted from classrooms, toilet and storage rooms, terminating in roof exhaust fans.

HVAC System Controls

The HVAC systems throughout the facility are controlled via DDC controls as manufactured by Johnson Controls. The building equipment operational status (on/off) and temperature set points are controlled through a central station terminal. Boilers are operated based on outside air temperature reset.

Domestic Hot Water

The domestic hot water is provided by a State model SBF-100199NET. This heater has a storage capacity of 100 gallons with an input of 199 MBH. The domestic hot water system in this school is in good condition and is within the ASHRAE recommended service life.

Lighting

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

III. MAJOR EQUIPMENT LIST

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

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

IV. ENERGY CONSERVATION MEASURES

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

Table 1
ECM Financial Summary

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST[A]**	**ANNUAL SAVINGS[B]**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
ECM #1	Lighting Upgrade	$22,582	$6,107	3.7	305.7%
ECM #2	Gym Lighting Upgrade	$4,000	$1,893	2.1	609.9%
ECM #3	Lighting Controls Upgrade	$14,805	$9,630	1.5	875.7%
ECM #4	Domestic Hot Water Upgrade	$10,602	$776	13.7	-12.2%
ECM #5	Boiler Upgrade	$139,339	$6,287	22.2	8.3%
ECM #6	Rooftop Unit Replacement	$221,682	$13,852	16.0	-6.3%
ECM #7	Split System Replacement	$41,309	$1,639	25.2	-40.5%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST**	**ANNUAL SAVINGS**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
REM #1	110.45 KW PV System	$664,542	$70,059	9.5	58.1%
Notes:	A. Cost takes into consideration applicable NJ Smart StartTM incentives.				
	B. Savings takes into consideration applicable maintenance savings.				

Table 2
ECM Energy Summary

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
ECM #1	Lighting Upgrade	14.90	38,411	0
ECM #2	Gym Lighting Upgrade	4.60	11,908	0
ECM #3	Lighting Controls Upgrade	19.83	60,567	0
ECM #4	Domestic Hot Water Upgrade	0.00	0	902
ECM #5	Boiler Upgrade	0.00	0	7,310
ECM #6	Rooftop Unit Replacement	72.60	87,121	0
ECM #7	Split System Replacement	8.60	10,310	0
RENEWABLE ENERGY MEASURES (REM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
REM #1	110.45 KW PV System	110.5	129,834	0

Table 3
Facility Project Summary

ENERGY SAVINGS IMPROVEMENT PROGRAM - POTENTIAL PROJECT					
ENERGY CONSERVATION MEASURES	**ANNUAL ENERGY SAVINGS ($)**	**PROJECT COST ($)**	**SMART START INCENTIVES**	**CUSTOMER COST**	**SIMPLE PAYBACK**
Lighting Upgrade	$6,107	$22,582	$0	$22,582	3.7
Gym Lighting Upgrade	$1,893	$6,000	$2,000	$4,000	2.1
Lighting Controls Upgrade	$9,630	$15,300	$495	$14,805	1.5
Domestic Hot Water Upgrade	$776	$11,000	$398	$10,602	13.7
Boiler Upgrade	$6,287	$145,339	$6,000	$139,339	22.2
Rooftop Unit Replacement	$13,852	$238,500	$16,818	$221,682	16.0
Split System Replacement	$1,639	$43,028	$1,719	$41,309	25.2
Design / Construction Extras (15%)		$72,262		*$72,262*	
Total Project	**$40,184**	**$554,011**	**$27,430**	**$526,581**	**13.1**

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

ECM #1: Lighting Upgrade – General

Description:

The majority of the interior lighting throughout Village Elementary School is provided with fluorescent fixtures with older generation, 700 series and 741/ECO 32W T8 lamps and electronic ballasts. Although these T8 lamps are considered fairly efficient, further energy savings can be achieved by replacing the existing T8 lamps with new generation, 800 series 28W T8 lamps without compromising light output. CE recommends, re-lamping all of the fixtures with 28W T8 lamps and in some cases removing a lamp from the fixture due to excessive foot candle levels in specific areas. In addition, the kitchen hood contains incandescent lamps which should be replaced. It is recommended to retrofit or replace all of the older fluorescent fixtures and the incandescent lights in these areas with newer fluorescent fixtures and compact fluorescent lamps.

This ECM includes re-lamping of the existing fluorescent fixtures with 800 series, 28W T8 lamps. The ECM also includes retrofit of all older fluorescent fixtures with T8 or T5 fluorescent fixtures with electronic ballasts in the building. The new, energy efficient T8 fixtures will provide adequate lighting and will save on electrical costs due to better performance of the lamp and ballasts.

The ECM also includes replacement of any incandescent lamps with compact fluorescent lamps. Compact fluorescent lamps (CFL's) were designed to be direct replacements for the standard incandescent lamps which are common to table lamps, spot lights, hi-hats, bathroom vanity lighting, etc. The light output of the CFL has been designed to resemble the incandescent lamp. The color rendering index (CRI) of the CFL is much higher than standard fluorescent lighting, and therefore provides a much "truer" light. The CFL is available in a myriad of shapes and sizes depending on the specific application. Typical replacements are: a 13-Watt CFL for a 60-Watt incandescent lamp, an 18-Watt CFL for a 75-Watt incandescent lamp, and a 26-Watt CFL for a 100-Watt incandescent lamp. The CFL is also available for a number of "brightness colors" that is indicated by the Kelvin rating. A 2700K CFL is the "warmest" color available and is closest in color to the incandescent lamp. CFL's are also available in 3000K, 3500K, and 4100K. The 4100K would be the "brightest" or "coolest" output. A CFL can be chosen to screw right into your existing fixtures, or hardwired into your existing fixtures. Where the existing fixture is controlled by a dimmer switch, the CFL bulb must be compatible with a dimmer switch. In some locations the bulb replacement will need to be tested to make sure the larger base of the CFL will fit into the existing fixture. The energy usage of an incandescent compared to a compact fluorescent approximately 3 to 4 times greater. In addition to the energy savings, compact fluorescent fixtures burn-hours are 8 to 15 times longer than incandescent fixtures ranging from 6,000 to 15,000 burn-hours compared to incandescent fixtures ranging from 750 to 1000 burn-hours. However, the maintenance savings due to reduced lamp replacement is offset by the higher cost of the CFL's compared to the incandescent lamps.

Energy Savings Calculations:

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

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$22,582
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$22,582
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$6,107
Total Yearly Savings ($/Yr):	$6,107
Estimated ECM Lifetime (Yr):	15
Simple Payback	3.7
Simple Lifetime ROI	305.7%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$91,609
Internal Rate of Return (IRR)	26%
Net Present Value (NPV)	$50,326.43

ECM #2: Lighting Upgrade - Gymnasium

Description:

The main gymnasium at Village Elementary School is currently lit via twenty HID, 400W, Metal Halide fixtures. The space would be better served with a more efficient, fluorescent lighting system. CE recommends upgrading the lighting to an energy-efficient T-5 lighting system that includes new lighting fixtures with high efficiency, electronic ballasts and T-5 high output (HO) lamps.

This measure replaces all the HID, 400 W HID MH fixtures with a well-designed T-5 lighting system. Twenty, 4-lamp T5HO high bay fixtures with reflectors and high-efficiency, electronic ballasts will be required in order to meet the mandated 50 foot-candle average within the spaces.

Energy Savings Calculations:

A detailed Investment Grade Lighting Audit can be found in **Investment Grade Lighting Audit Appendix** that outlines the proposed retrofits, costs, savings, and payback periods.

From the **Smart Start Incentive Appendix**, the replacement of a 400 W HID fixture to a T-5 or T-8 fixture warrants the following incentive: $100 per fixture.

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$6,000
NJ Smart Start Equipment Incentive ($):	$2,000
Net Installation Cost ($):	$4,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$1,893
Total Yearly Savings ($/Yr):	$1,893
Estimated ECM Lifetime (Yr):	15
Simple Payback	2.1
Simple Lifetime ROI	609.9%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$28,395
Internal Rate of Return (IRR)	47%
Net Present Value (NPV)	$18,598.51

ECM #3: Lighting Controls Upgrade – Occupancy Sensors

Description:

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

Emergency lighting is required in corridors and in Village Elementary School they are left on 24/7 in order to provide illumination for exiting a building in the event of an emergency. These lights are powered by the schools emergency power circuits and remain lit during a power outage. The school has approximately one third of all hallway fixtures setup as an emergency light. The actual number of fixtures should be confirmed in the field. We have recommended an emergency lighting control device which will allow these lights to be controlled along with the standard corridor lighting, thereby limiting their use to occupied hours only.

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

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

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

Savings resulting from the implementation of this ECM for energy management controls are estimated to be 20% of the total light energy controlled by occupancy sensors (The majority of the savings is expected to be after school hours when rooms are left with lights on)

A report by the EPA (2001) suggests that daylit offices can achieve up to 35%-40% savings, and that other daylit spaces (classrooms, grocery stores, and retail outlets) can achieve 40%-60% savings. Clearly, these savings apply only to perimeter or sky-lit portions of a building's floor space and the percentage of national commercial building floorspace with sufficient levels of daylight to apply automatic daylight dimming is not known.

Savings resulting from the implementation of this ECM for energy management controls are estimated to be 40% of the total light energy controlled by daylight sensors.

This ECM includes installation of ceiling or switch mount sensors for individual offices, classrooms, large bathrooms, and Media Centers. In addition, sensors for emergency lighting in the corridors are being integrated as well. Sensors shall be manufactured by Sensor Switch, Watt Stopper or equivalent. The **Investment Grade Lighting Audit Appendix** of this report includes the summary of lighting controls implemented in this ECM and outlines the proposed controls, costs, savings, and payback periods. The calculations adjust the lighting power usage by the applicable percent savings for each area that includes lighting controls.

Energy Savings Calculations:

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

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

Rebates and Incentives:

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

Smart Start Incentive
= (# Wall mount sensors × $20 per sensor)
+ (# Ceiling mount sensors × $35 per sensor)

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$15,300
NJ Smart Start Equipment Incentive ($):	$495
Net Installation Cost ($):	$14,805
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$9,630
Total Yearly Savings ($/Yr):	$9,630
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.5
Simple Lifetime ROI	875.7%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$144,450
Internal Rate of Return (IRR)	65%
Net Present Value (NPV)	$100,157.31

ECM #4: High Efficiency Gas Hot Water Heater

Description:

The Village Elementary School has an existing gas-fired hot water heater which is located in the boiler room. The heater has approached its useful life and could be replaced with a much more efficient hot water heating system.

This ECM will replace the gas-fired domestic water heater with a 95% thermal efficient A.O. Smith Cyclone XI Natural Gas fired 199 MBH and 100 gallons of storage domestic water heater.

Energy Savings Calculations:

CONDENSING DOM. HOT WATER HEATER CALCULATIONS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	Existing Hot Water Heater	A.O Smith High Efficiency	
Building Type	Education		
Building Square-foot	87,900	87,900	
Domestic Water Usage, kBtu	457,080.00	457,080.00	
DHW Heating Fuel Type	Gas	Gas	
Heating Efficiency	80%	95%	15%
Total Usage (kBTU)	571,350	481,137	90,213
Nat Gas Cost ($/Therm)	$ 0.860	$ 0.860	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Natural Gas Usage (Therms)	5,714	4,811	902
Energy Cost ($)	$4,914	$4,138	$776
COMMENTS:	Savings are based on Energy Information Administration Commercial Building Energy Consumption Survey 2003 Information		

Energy Density for "Education" type building = 5.2 kBtu / SF / year

$$DHW\ \ Heat\ Usage = Energy\ Density\left(\frac{kBtu\ yr}{SF}\right)\times Building\ \ Square\ Footage\ \ (SF)$$

$$DHW\,Total\,Usage = \frac{Dom\ HW\ \ Heat\ Cons.(Btu)}{Heating\ \ Eff.(\%)\times Fuel\ \ Heat\ Value\left(\frac{BTU}{Fuel\,Unit}\right)}$$

$$Energy\ Cost = Heating\ \ Fuel\ Usage(Fuel\,Units)\times Ave\ \ Fuel\ \ Cost\left(\frac{\$}{Fuel\,Unit}\right)$$

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$11,000
NJ Smart Start Equipment Incentive ($):	$398
Net Installation Cost ($):	$10,602
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$776
Total Yearly Savings ($/Yr):	$776
Estimated ECM Lifetime (Yr):	12
Simple Payback	13.7
Simple Lifetime ROI	-12.2%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$9,312
Internal Rate of Return (IRR)	-2%
Net Present Value (NPV)	($2,877.69)

ECM #5: Condensing Boiler Installation

Description:

There are two sets of eight existing Hydrotherm Multitemp boilers that are used as the primary source of heat for both sections of the Village Elementary School. The existing boilers are approaching half of their life expectancy of typical cast iron boilers; however the equipment appears to be maintained in fair operating condition. Even for boilers that are close to the end of its life it is difficult to predict the point at which the boiler becomes inoperable. With the increased efficiency of the condensing boilers, the savings can be substantial.

New condensing boilers could substantially improve the operating efficiency of the heating system of the building. Condensing boiler's peak efficiency tops out at 99% depending on return water temperature. Due to the operating conditions of the building, the annual average operating efficiency of the proposed condensing boiler is expected to be 88%. The existing boiler's efficiency is approximately 77%, which makes the condensing boilers an 11% increase in efficiency. This ECM is based on variable supply water temperature adjusted based on outdoor air temperature.

This ECM includes installation of four condensing gas fired boilers to replace the existing modular boilers. The basis for this ECM is Aerco condensing boilers; model number BMK – 3.0. The boiler installation is based on a one for one replacement based on capacity of the existing boiler systems.

Energy Savings Calculations:

Baseline Hot Water Gas Use: 5,714 Therms

Existing Heating Natural Gas: 64,194 Therms – (5,714 Therms) = 58,480 Therms

$$Bldg\ Heat\ \mathrm{Re}quired = Existing\ Nat\ Gas\ (Therms) \times Heating\ Eff.(\%) \times Fuel\ HeatValue\left(\frac{BTU}{Therm}\right)$$

$$\mathrm{Pr}oposed\ Heating\ Gas\ Usage = \frac{Bldg\ Heat\ \mathrm{Re}quired\ (BTU)}{Heating\ Eff.(\%) \times Fuel\ Heat\ Value\left(\frac{BTU}{Therm}\right)}$$

$$Energy\ Cost = Heating\ Gas\ Usage(Therms) \times Ave\ Fuel\ Cost\left(\frac{\$}{Therm}\right)$$

CONDENSING BOILER CALCULATIONS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	Existing Cast Iron Boilers	New Condensing Boilers	
Existing Nat Gas (Therms)	58,480	0	
Boiler Efficiency (%)	77%	88%	11%
Nat Gas Heat Value (BTU/Therm)	100,000	100,000	
Equivalent Building Heat Usage (MMBTUs)	4,503	4,503	
Gas Cost ($/Therm)	0.86	0.86	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Natural Gas Usage (Therms)	58,480	51,170	7,310
Energy Cost ($)	$50,293	$44,006	$6,287
COMMENTS:			

From the **NJ Smart Start Appendix**, the installation of new condensing boilers warrants the following incentive: $1.00 per MBH.

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$145,339
NJ Smart Start Equipment Incentive ($):	$6,000
Net Installation Cost ($):	$139,339
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$6,287
Total Yearly Savings ($/Yr):	$6,287
Estimated ECM Lifetime (Yr):	24
Simple Payback	22.2
Simple Lifetime ROI	8.3%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$150,888
Internal Rate of Return (IRR)	1%
Net Present Value (NPV)	($32,865.25)

ECM #6: Replace Rooftop Units with High Efficiency Units

Description:

The Montgomery Township Village Elementary School has several packaged rooftop systems throughout the school which condition single zones. These units are also approaching their ASHRAE service life and should be considered for replacement in the near future.

The unit is in good condition though the current unit in operation is not a high efficiency unit. The unit was recently replaced and is only two years old.

The unit currently installed is a lower efficiency compared to a modern unit. The unit can be replaced with a new high efficiency unit. New condensing units provide higher full load and part load efficiencies due to advances in inverter motor technologies, heat exchangers and higher efficiency refrigerants such as R410A which would be used in place of R22 that is currently used in the unit.

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

IMPLEMENTATION SUMMARY					
ECM INPUTS	**SERVICE FOR**	**NUMBER OF UNITS**	**COOLING CAPACITY, BTU/HR**	**TOTAL CAPACITY, TONS**	**REPLACE UNIT WITH**
RTU	Intellipak	5	360,000	30.0	TCD360
RTU	Voyager	1	102,000	8.5	THC102
RTU	Voyager	1	120,000	10.0	THC120
RTU	Intellipak	1	300,000	25.0	TCD300
RTU	Voyager	3	90,000	7.5	THC090
Total		**11**	**972,000**	**81**	

The manufacturers used as the basis for the calculation is Trane. The unit pricing and install cost were estimated based on current rates quotes and labor rates. The payback may change based on actual unit pricing and install costs if the ECM is implemented.

Energy Savings Calculations:
Cooling Energy Savings:

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

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

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

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

ENERGY SAVINGS CALCULATIONS							
ECM INPUTS	**COOLING CAPACITY, BTU/Hr**	**ANNUAL COOLING HOURS**	**EXISTING UNITS EER**	**SPLIT UNITS EER**	**# OF UNITS**	**ENERGY SAVINGS kWh**	**DEMAND SAVINGS kW**
RTU	360,000	1,200	8.5 EER	11 EER	5	57,754	48.1
RTU	102,000	1,200	9 EER	13 EER	1	4,185	3.5
RTU	120,000	1,200	9 EER	12.5 EER	1	4,480	3.7
RTU	300,000	1,200	8.5 EER	11 EER	1	9,626	8.0
RTU	90,000	1,200	9 EER	13 EER	3	11,077	9.2
Total					5	87,121	72.6

Project Cost, Incentives and Maintenance Savings

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

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

SPLIT SYSTEM AC UNITS REBATE SUMMARY				
UNIT DESCRIPTION	**UNIT EFFICIENCY**	**REBATE $/TON**	**PROPOSED CAPACITY TONS**	**TOTAL REBATE $**
≥20 to 30 tons	10.5 EER	79	175	$13,825
≥ 11.25 to < 20 tons	11.5 EER	79	0	$0
≥ 5.4 to < 11.25 tons	11.5 EER	73	41	$2,993
5.4 tons or less Unitary AC and Split System	≥14 SEER	$92	0.0	$0
TOTAL			**216**	**$16,818**

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

COST & SAVINGS SUMMARY							
ECM INPUTS	**INSTALLED COST**	**# OF UNITS**	**TOTAL COST**	**REBATES**	**NET COST**	**ENERGY SAVING**	**PAY BACK YEARS**
RTU	$130,000	5	$130,000	$11,850	$118,150	$9,183	12.9
RTU	$16,250	1	$16,250	$621	$15,630	$665	23.5
RTU	$17,500	1	$17,500	$730	$16,770	$712	23.5
RTU	$26,000	1	$26,000	$1,975	$24,025	$1,530	15.7
RTU	$48,750	3	$48,750	$1,643	$47,108	$1,761	26.7
Total	$238,500	11	$238,500	$16,818	$221,682	$13,852	16.0

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

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$238,500
NJ Smart Start Equipment Incentive ($):	$16,818
Net Installation Cost ($):	$221,682
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$13,852
Total Yearly Savings ($/Yr):	$13,852
Estimated ECM Lifetime (Yr):	15
Simple Payback	16.0
Simple Lifetime ROI	-6.3%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	$207,780
Internal Rate of Return (IRR)	-1%
Net Present Value (NPV)	($56,317.72)

ECM #7: Split Systems Replacement

Description:

The Montgomery Township Village Elementary School has several split systems throughout the school which condition single zones. These units are also approaching their ASHRAE service life and should be considered for replacement in the near future.

The units currently installed are a lower efficiency compared to modern units. These units can be replaced with new high efficiency units. New condensing units provide higher full load and part load efficiencies due to advances in inverter motor technologies, heat exchangers and higher efficiency refrigerants such as R410A which would be used in place of R22 that are currently used in the units.

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

IMPLEMENTATION SUMMARY					
ECM INPUTS	**SERVICE FOR**	**NUMBER OF UNITS**	**COOLING CAPACITY, BTU/HR**	**TOTAL CAPACITY, TONS**	**REPLACE UNIT WITH**
SS	Oyssey	1	120,000	10.0	Trane Odyssey
SS	Carrier	1	102,000	8.5	Trane Odyssey
SS	Airdale	1	24,000	2.0	Trane Odyssey
SS	Airdale	1	12,000	1.0	Trane Odyssey
SS	Fujitsu	1	12,000	1.0	Trane Odyssey
Total		**5**	**270,000**	**22.5**	

The manufacturers used as the basis for the calculation is Carrier. The unit pricing and install cost were estimated based on current rates quotes and labor rates. The payback may change based on actual unit pricing and install costs if the ECM is implemented.

Energy Savings Calculations:

Cooling Energy Savings:

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

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

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

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

ENERGY SAVINGS CALCULATIONS							
ECM INPUTS	**COOLING CAPACITY, BTU/Hr**	**ANNUAL COOLING HOURS**	**EXISTING UNITS EER**	**SPLIT UNITS EER**	**# OF UNITS**	**ENERGY SAVINGS kWh**	**DEMAND SAVINGS kW**
SS	120,000	1,200	9 EER	12.5 EER	1	4,480	3.7
SS	102,000	1,200	9 EER	13 EER	1	4,185	3.5
SS	24,000	1,200	10 SEER	14 SEER	1	823	0.7
SS	12,000	1,200	10 SEER	14 SEER	1	411	0.3
SS	12,000	1,200	10 SEER	14 SEER	1	411	0.3
Total					5	10,310	8.6

Project Cost, Incentives and Maintenance Savings

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

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

SPLIT SYSTEM AC UNITS REBATE SUMMARY				
UNIT DESCRIPTION	**UNIT EFFICIENCY**	**REBATE $/TON**	**PROPOSED CAPACITY TONS**	**TOTAL REBATE $**
≥20 to 30 tons	10.5 EER	79	0	$0
≥ 11.25 to < 20 tons	11.5 EER	79	0	$0
≥ 5.4 to < 11.25 tons	11.5 EER	73	19	$1,351
5.4 tons or less Unitary AC and Split System	≥14 SEER	$92	4.0	$368
TOTAL			**22.5**	**$1,719**

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

COST & SAVINGS SUMMARY							
ECM INPUTS	**INSTALLED COST**	**# OF UNITS**	**TOTAL COST**	**REBATES**	**NET COST**	**ENERGY SAVING**	**PAY BACK YEARS**
SS	$17,000	1	$17,000	$730	$16,270	$712	22.8
SS	$14,750	1	$14,750	$621	$14,130	$665	21.2
SS	$6,000	1	$6,000	$184	$5,816	$131	44.5
SS	$2,639	1	$2,639	$92	$2,547	$65	38.9
SS	$2,639	1	$2,639	$92	$2,547	$65	38.9
Total	$43,028	5	$43,028	$1,719	$41,309	$1,639	25.2

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

Energy Savings Summary:

ECM #7 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$43,028
NJ Smart Start Equipment Incentive ($):	$1,719
Net Installation Cost ($):	$41,309
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$1,639
Total Yearly Savings ($/Yr):	$1,639
Estimated ECM Lifetime (Yr):	15
Simple Payback	25.2
Simple Lifetime ROI	-40.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$24,585
Internal Rate of Return (IRR)	-6%
Net Present Value (NPV)	($21,742.72)

V. ADDITIONAL RECOMMENDATIONS

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

A. Chemically clean the condenser and evaporator coils periodically to optimize efficiency. Poorly maintained heat transfer surfaces can reduce efficiency 5-10%.

B. Maintain all weather stripping on windows and doors.

C. Clean all light fixtures to maximize light output.

D. Provide more frequent air filter changes to decrease overall system power usage and maintain better IAQ.

E. Turn off computers when not in use. Ensure computers are not running in screen saver mode which saves the monitor screen not energy.

F. Ensure outside air dampers are functioning properly and only open during occupied mode.

APPENDIX A

ECM COST & SAVINGS BREAKDOWN

CONCORD ENGINEERING GROUP

Montgomery Township BOE - Village Elementary School

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)	$\sum_{n=0}^{N} \frac{C_n}{(1+IRR)^{n_i}}$	$\sum_{n=0}^{N} \frac{C_n}{(1+DR)^{n_i}}$
		($)	($)	($)	($)	($/Yr)	($/Yr)	($/Yr)	(Yr)	($)	($)	(%)	(Yr)	($)	($)
ECM ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
ECM #1	Lighting Upgrade	$22,582	$0	$0	$22,582	$6,107	$0	$6,107	15	$91,609	$0	305.7%	3.7	26.22%	$50,326.43
ECM #2	Gym Lighting Upgrade	$6,000	$0	$2,000	$4,000	$1,893	$0	$1,893	15	$28,395	$0	609.9%	2.1	47.18%	$18,598.51
ECM #3	Lighting Controls Upgrade	$15,300	$0	$495	$14,805	$9,630	$0	$9,630	15	$144,450	$0	875.7%	1.5	65.01%	$100,157.31
ECM #4	Domestic Hot Water Upgrade	$6,000	$5,000	$398	$10,602	$776	$0	$776	12	$9,312	$0	-12.2%	13.7	-1.94%	($2,877.69)
ECM #5	Boiler Upgrade	$107,455	$37,884	$6,000	$139,339	$6,287	$0	$6,287	24	$150,888	$0	8.3%	22.2	0.65%	($32,865.25)
ECM #6	Rooftop Unit Replacement	$177,500	$61,000	$16,818	$221,682	$13,852	$0	$13,852	15	$207,780	$0	-6.3%	16.0	-0.80%	($56,317.72)
ECM #7	Split System Replacement	$20,961	$22,067	$1,719	$41,309	$1,639	$0	$1,639	15	$24,585	$0	-40.5%	25.2	-5.88%	($21,742.72)
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	110.45 KW PV System	$664,542	$0	$0	$664,542	$19,994	$50,065	$70,059	15	$1,050,885	$750,975	58.1%	9.5	6.36%	$171,817.79

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* .

APPENDIX B

Concord Engineering Group, Inc.

520 BURNT MILL ROAD
VOORHEES, NEW JERSEY 08043
PHONE: (856) 427-0200
FAX: (856) 427-6508

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 15, 2011:

Electric Chillers

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

Energy Efficiency must comply with ASHRAE 90.1-2007

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 - $92 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 90.1-2007

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%

Ground Source Heat Pumps

Closed Loop	$450 per ton, EER ≥ 16 $600 per ton, EER ≥ 18 $750 per ton, EER ≥ 20

Energy Efficiency must comply with ASHRAE 90.1-2007

Variable Frequency Drives

Variable Air Volume	$65 - $155 per hp
Chilled-Water Pumps	$60 per VFD rated hp
Compressors	$5,250 to $12,500 per drive
Cooling Towers ≥ 10 hp	$60 per VFD rated hp

Natural Gas Water Heating

Gas Water Heaters ≤ 50 gallons, 0.67 energy factor or better	$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 (1-4 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 Including Parking Lot	$25 per fixture
T-5 and T-8 High Bay Fixtures	$16 - $200 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

Prescriptive Lighting - LED

LED New Exit Sign Fixture Existing Facility < 75 kw Existing Facility > 75 kw	 $20 per fixture $10 per fixture
LED Display Case Lighting	$30 per display case
LED Shelf-Mtd. Display & Task Lights	$15 per linear foot
LED Portable Desk Lamp	$20 per fixture
LED Wall-wash Lights	$30 per fixture
LED Recessed Down Lights	$35 per fixture
LED Outdoor Pole/Arm-Mounted Area and Roadway Luminaries	$175 per fixture
LED Outdoor Pole/Arm-Mounted Decorative Luminaries	$175 per fixture
LED Outdoor Wall-Mounted Area Luminaries	$100 per fixture
LED Parking Garage Luminaries	$100 per fixture
LED Track or Mono-Point Directional Lighting Fixtures	$50 per fixture
LED High-Bay and Low-Bay Fixtures for Commercial & Industrial Bldgs.	$150 per fixture
LED High-Bay-Aisle Lighting	$150 per fixture
LED Bollard Fixtures	$50 per fixture
LED Linear Panels (2x2 Troffers only)	$100 per fixture
LED Fuel Pump Canopy	$100 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 90.1-2007 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%

APPENDIX C

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Village Elementary School

Building ID: 1498530
For 12-month Period Ending: December 31, 2011[1]
Date SEP becomes ineligible: N/A
Date SEP Generated: February 16, 2012

Facility
Village Elementary School
100 Main Blvd.
Skillman, NJ 08558

Facility Owner
Montgomery Township BOE
1014 Route 601
Skillman, NJ 08558

Primary Contact for this Facility
Thomas Venanzi
1014 Route 601
Skillman, NJ 08558

Year Built: 2001
Gross Floor Area (ft²): 87,920

Energy Performance Rating[2] (1-100) 36

Site Energy Use Summary[3]

Electricity - Grid Purchase(kBtu)	3,226,645
Natural Gas (kBtu)[4]	6,181,200
Total Energy (kBtu)	9,407,845

Energy Intensity[4]

Site (kBtu/ft²/yr)	107
Source (kBtu/ft²/yr)	196

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	786

Electric Distribution Utility
Public Service Electric & Gas Co

National Median Comparison

National Median Site EUI	95
National Median Source EUI	174
% Difference from National Median Source EUI	13%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards[5] **for Indoor Environmental Conditions:**

Ventilation for Acceptable Indoor Air Quality	**N/A**
Acceptable Thermal Environmental Conditions	**N/A**
Adequate Illumination	**N/A**

Certifying Professional
John Marchiafava
520 S. Burnt Mill Rd.
Voorhees, NJ 08043

Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.
NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Building Name	Village Elementary School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	K-12 School	Is this an accurate description of the space in question?		☐
Location	100 Main Blvd., Skillman, NJ 08558	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.		☐
Village Elementary School (K-12 School)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑
Gross Floor Area	87,920 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		☐
Open Weekends?	Yes	Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days.		☐
Number of PCs	222	Is this the number of personal computers in the K12 School?		☐
Number of walk-in refrigeration/freezer units	0	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		☐
Presence of cooking facilities	Yes	Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".		☐
Percent Cooled	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Months	12(Optional)	Is this school in operation for at least 8 months of the year?		☐

High School?	No	Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'.		☐

(VES) Parking Lot (Parking)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	50,880 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐
Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.		☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).		☐
Open Floor Area (w/o roof)	50,880 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.		☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Public Service Electric & Gas Co

Fuel Type: Electricity

Meter: E-62-102-964-16 (kWh (thousand Watt-hours))
Space(s): Village Elementary School
Generation Method: Grid Purchase

Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
11/08/2011	12/07/2011	70,914.00
10/08/2011	11/07/2011	88,684.00
09/08/2011	10/07/2011	147,839.00
08/08/2011	09/07/2011	50,441.00
07/08/2011	08/07/2011	76,201.00
06/08/2011	07/07/2011	97,839.00
05/08/2011	06/07/2011	86,184.00
04/08/2011	05/07/2011	66,792.00
03/08/2011	04/07/2011	71,809.00
02/08/2011	03/07/2011	61,405.00
01/08/2011	02/07/2011	63,771.00
E-62-102-964-16 Consumption (kWh (thousand Watt-hours))		**881,879.00**
E-62-102-964-16 Consumption (kBtu (thousand Btu))		**3,008,971.15**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		**3,008,971.15**
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐

Fuel Type: Natural Gas

Meter: G-62-107-020-58 (therms)
Space(s): Village Elementary School

Start Date	End Date	Energy Use (therms)
11/08/2011	12/07/2011	6,252.00
10/08/2011	11/07/2011	5,024.00
09/08/2011	10/07/2011	5,254.00
08/08/2011	09/07/2011	98.00
07/08/2011	08/07/2011	97.00
06/08/2011	07/07/2011	3,450.00
05/08/2011	06/07/2011	3,232.00
04/08/2011	05/07/2011	4,775.00
03/08/2011	04/07/2011	7,277.00
02/08/2011	03/07/2011	7,333.00
01/08/2011	02/07/2011	11,182.00

G-62-107-020-58 Consumption (therms)	**53,974.00**
G-62-107-020-58 Consumption (kBtu (thousand Btu))	**5,397,400.00**
Total Natural Gas Consumption (kBtu (thousand Btu))	**5,397,400.00**
Is this the total Natural Gas consumption at this building including all Natural Gas meters?	☐

Additional Fuels	
Do the fuel consumption totals shown above represent the total energy use of this building? Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

Facility
Village Elementary School
100 Main Blvd.
Skillman, NJ 08558

Facility Owner
Montgomery Township BOE
1014 Route 601
Skillman, NJ 08558

Primary Contact for this Facility
Thomas Venanzi
1014 Route 601
Skillman, NJ 08558

General Information

Village Elementary School	
Gross Floor Area Excluding Parking: (ft^2)	87,920
Year Built	2001
For 12-month Evaluation Period Ending Date:	December 31, 2011

Facility Space Use Summary

Village Elementary School	
Space Type	K-12 School
Gross Floor Area(ft^2)	87,920
Open Weekends?	Yes
Number of PCs	222
Number of walk-in refrigeration/freezer units	0
Presence of cooking facilities	Yes
Percent Cooled	100
Percent Heated	100
Months[o]	12
High School?	No
School District[o]	N/A

(VES) Parking Lot	
Space Type	Parking
Gross Floor Area(ft^2)	50,880
Enclosed Floor Area	0
Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	50,880
Weekly Hours of Access	168

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 12/31/2011)	**Baseline** (Ending Date 09/30/2006)	**Rating of 75**	**Target**	**National Median**
Energy Performance Rating	36	1	75	N/A	50
Energy Intensity					
Site (kBtu/ft^2)	107	201	75	N/A	95
Source (kBtu/ft^2)	196	371	138	N/A	174
Energy Cost					
$/year	N/A	N/A	N/A	N/A	N/A
$/$ft^2$/year	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions					
$MtCO_2e$/year	786	1,483	551	N/A	698
$kgCO_2e/ft^2$/year	9	17	6	N/A	8

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:
o - This attribute is optional.
d - A default value has been supplied by Portfolio Manager.

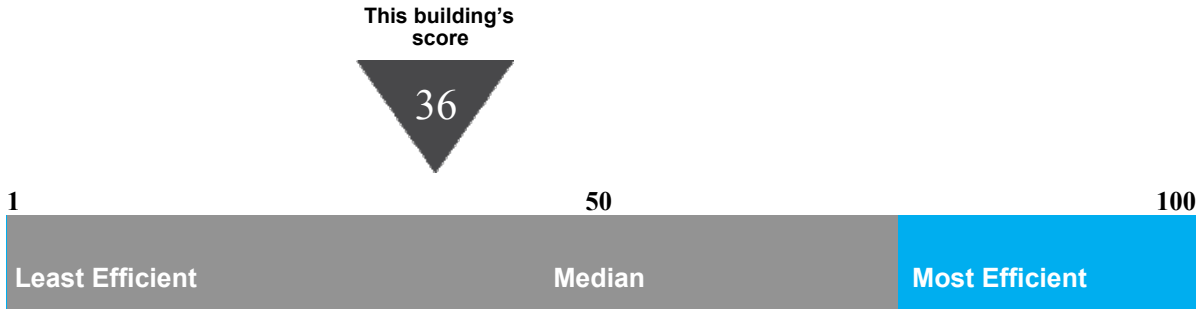
Statement of Energy Performance

2011

Village Elementary School
100 Main Blvd.
Skillman, NJ 08558

Portfolio Manager Building ID: 1498530

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 196 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending December 2011

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification

EPA United States Environmental Protection Agency

Date Generated: 02/16/2012

APPENDIX D

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Village Elementary School

AC Units

Tag			
Unit Type	Rooftop Unit	Rooftop Unit	Rooftop Unit
Qty	5	1	1
Location	Rooftop	Rooftop	Rooftop
Area Served			
Manufacturer	Trane Intellipak	Trane Voyager	Trane Voyager
Model #	SXHFC3040UF6C5BD1001A	TCD102C40CAB	TCD120C40AAB
Serial #	C00D10485	R19103599D	R19103602D
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	30 Tons	8.5 Tons	10 Tons
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	11	11	11
ASHRAE Service Life	15	15	15
Remaining Life	4	4	4
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

Montgon

AC Units

Tag		RTU-1,2	ACCU-3
Unit Type	Rooftop Unit	Rooftop Unit	Rooftop Unit
Qty	1	2	3
Location	Rooftop	Rooftop	Rooftop
Area Served			
Manufacturer	Trane Intellipak	Trane Precedent	Trane Voyager
Model #	SXHFC2540UF5C3BD1001A	THC048E3R0A0VH0C0A1	TCD090C40CBC
Serial #	C00D10445	104612257L	R19103675D
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	25 Tons	4 Tons	7.5 Tons
Cooling Efficiency (SEER/EER)	-	15 EER	8.9 EER
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	11	1	11
ASHRAE Service Life	15	15	15
Remaining Life	4	14	4
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

Montgon

AC Units

Tag	**ACCU-5**		
Unit Type	Split System	Split System	Split System
Qty	1	1	1
Location	Ground Level	Outside	Outside
Area Served			
Manufacturer	Trane Odyssey	McQuay	Carrier
Model #	TTA120B300CA	RCSC045DYY	38AKS009---501--
Serial #	P2217TRAH	FB0U11060434 01	1800G04159
Cooling Type	DX, R-22	DX, R-410A	DX, R-22
Cooling Capacity (Tons)	10 Tons	45 Tons	8.5 Tons
Cooling Efficiency (SEER/EER)	8.9 EER	13 EER	11.1 EER
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	12	1	11
ASHRAE Service Life	15	15	15
Remaining Life	3	14	4
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

Montgon

AC Units

Tag	CAC-2	CAC-1	
Unit Type	Condensing Unit	Condensing Unit	Split System
Qty	1	1	1
Location	Outside	Outside	Indoor
Area Served	Nurse	Gym Offices	
Manufacturer	Airedale	Airedale	Fujitsu
Model #	SCC24DFA0A0AA0A	SCC12DA00A0AA0A	ASU9RLS
Serial #	1-99-B-5693-9	1-98-H-4940-35	HRA 002150
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	2 Tons	1 Ton	1 Ton
Cooling Efficiency (SEER/EER)	11.2 SEER	10.6 SEER	-
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	12	12	12
ASHRAE Service Life	15	15	15
Remaining Life	3	3	3
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Village Elementary School

Boilers

Tag			
Unit Type	Gas Fired Boiler		
Qty	2		
Location	Boiler Room		
Area Served	HW Loop		
Manufacturer	Hydrotherm Multitemp		
Model #	MG-3080		
Serial #	MVC-1275		
Input Capacity (Btu/Hr)	3,176		
Rated Output Capacity (Btu/Hr)	2,440		
Approx. Efficiency %	76.8%		
Fuel	Nat Gas		
Approx Age	14		
ASHRAE Service Life	35		
Remaining Life	21		
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Village Elementary School

Domestic Water Heaters

Tag			
Unit Type	Domestic Hot Water		
Qty	1		
Location	Boiler Room		
Area Served	Hot Water Loop		
Manufacturer	State		
Model #	SBF100199NET		
Serial #	099108539		
Size (Gallons)	100 Gallons		
Input Capacity (MBH/KW)	199.99 MBH		
Recovery (Gal/Hr)	189 GPH		
Efficiency %	80%		
Fuel	Nat Gas		
Approx Age	12		
ASHRAE Service Life	12		
Remaining Life	0		
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Village Elementary School

Pumps

Tag			
Unit Type	End Suction		
Qty	2		
Location	Boiler Room		
Area Served	Boiler Loop		
Manufacturer	Taco		
Model #	FI2506E2DAH1L0A		
Serial #	EC69689/24		
Horse Power	5 HP		
Flow	150 GPM @ 75 FTHD		
Motor Info	Baldor		
Electrical Power	208-230/460/3/60		
RPM	3450 RPM		
Motor Efficiency %	86.5%		
Approx Age	1		
ASHRAE Service Life	20		
Remaining Life	19		
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

APPENDIX E

Investment Grade Lighting Audit

CEG Job #: 9C11058

Project: Montgomery TWP. LGEA **Village Elementary School** **KWH COST: $0.159**

Bldg. Sq. Ft.

ECM 1&2: Lighting Upgrade - General & Gym

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
237.21	Main Office	2600	19	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	1.75	4,544.8	$722.62	19	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
237.21	Office #1	2600	4	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.37	956.8	$152.13	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
237.21	Office #2	2600	6	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.55	1,435.2	$228.20	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Office #3	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
221.11	Electrical Closet	1200	6	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	446.4	$70.98	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.29	352.8	$56.10	$14.00	$84.00	0.08	93.6	$14.88	5.64
222.21	Copy Room	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
232.21	Classroom 111	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	$675.50	19	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.37	3556.8	$565.53	$21.00	$399.00	0.27	691.6	$109.96	3.63
237.21	111 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 108	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	$675.50	19	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.37	3556.8	$565.53	$21.00	$399.00	0.27	691.6	$109.96	3.63
237.21	108 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 113	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	$675.50	19	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.37	3556.8	$565.53	$21.00	$399.00	0.27	691.6	$109.96	3.63
237.21	113 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 110	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	$675.50	19	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.37	3556.8	$565.53	$21.00	$399.00	0.27	691.6	$109.96	3.63
237.21	110 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor 113 - El Rm	3000	15	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.93	2,790.0	$443.61	15	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.74	2205	$350.60	$14.00	$210.00	0.20	585	$93.02	2.26
221.34	113 Exit	3000	1	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., No Lens	62	0.06	186.0	$29.57	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	147	$23.37	$14.00	$14.00	0.01	39	$6.20	2.26
232.21	Classroom 109	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	$675.50	19	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.37	3556.8	$565.53	$21.00	$399.00	0.27	691.6	$109.96	3.63

Investment Grade Lighting Audit

ECM 1&2: Lighting Upgrade - General & Gym

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
237.21	109 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Guidance Office	2600	6	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.37	951.6	$151.30	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Office 1	2600	4	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.24	634.4	$100.87	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Office 2	2600	3	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.18	475.8	$75.65	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Office 3	2600	3	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.18	475.8	$75.65	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.24	Office 4	2600	3	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., No Lens	109	0.33	850.2	$135.18	3	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.29	764.4	$121.54	$28.00	$84.00	0.03	85.8	$13.64	6.16
222.21	Corridor 106 - ML	3000	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	744.0	$118.30	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.20	588	$93.49	$14.00	$56.00	0.05	156	$24.80	2.26
222.21	Corridor 106 - ML	8760	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	1,086.2	$172.71	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	858.48	$136.50	$14.00	$28.00	0.03	227.76	$36.21	0.77
222.21	Corridor - Gym	3000	6	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.37	1,116.0	$177.44	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.29	882	$140.24	$14.00	$84.00	0.08	234	$37.21	2.26
222.21	Corridor - Gym	8760	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	2,172.5	$345.42	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.20	1716.96	$273.00	$14.00	$56.00	0.05	455.52	$72.43	0.77
770	Gym	2600	20	1	2x2 Recessed 400w MH, Prismatic Lens	465	9.30	24,180.0	$3,844.62	20	4	2x4 54w T5HO 4 Lamp w/Reflecter & Wire Guard	236	4.72	12272	$1,951.25	$300.00	$6,000.00	4.58	11908	$1,893.37	3.17
222.21	Custodial Closet	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
221.31	Mech Room	3000	17	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	1.05	3,162.0	$502.76	17	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.83	2499	$397.34	$14.00	$238.00	0.22	663	$105.42	2.26
221.31	Stage	1800	7	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.43	781.2	$124.21	7	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.34	617.4	$98.17	$14.00	$98.00	0.09	163.8	$26.04	3.76
237.22	Gym Corridor	3000	3	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.18	549.0	$87.29	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
221.11	Gym Storage	1200	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	117.6	$18.70	$14.00	$28.00	0.03	31.2	$4.96	5.64
221.11	Storage	1200	6	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	446.4	$70.98	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.29	352.8	$56.10	$14.00	$84.00	0.08	93.6	$14.88	5.64
237.22	Gym Office	2600	8	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.49	1,268.8	$201.74	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
221.31	Gym Restroom	2600	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61

Investment Grade Lighting Audit

ECM 1&2: Lighting Upgrade - General & Gym

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
221.31	Gym Storage	1200	3	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.19	223.2	$35.49	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.15	176.4	$28.05	$14.00	$42.00	0.04	46.8	$7.44	5.64
221.31	Gym Storage - Upper	1200	4	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.25	297.6	$47.32	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.20	235.2	$37.40	$14.00	$56.00	0.05	62.4	$9.92	5.64
221.31	Gym Storage	1200	5	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.31	372.0	$59.15	5	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.25	294	$46.75	$14.00	$70.00	0.07	78	$12.40	5.64
242.21	Lobby	3000	15	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.64	4,905.0	$779.90	15	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.47	4410	$701.19	$28.00	$420.00	0.17	495	$78.70	5.34
221.14		3000	36	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., No Lens	62	2.23	6,696.0	$1,064.66	36	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	1.76	5292	$841.43	$14.00	$504.00	0.47	1404	$223.24	2.26
222.21	Closet - ML	1200	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	117.6	$18.70	$14.00	$28.00	0.03	31.2	$4.96	5.64
222.21	Corridor 104	3000	9	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.56	1,674.0	$266.17	9	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.44	1323	$210.36	$14.00	$126.00	0.12	351	$55.81	2.26
222.21	Corridor 104	8760	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	2,172.5	$345.42	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.20	1716.96	$273.00	$14.00	$56.00	0.05	455.52	$72.43	0.77
232.21	Classroom 105	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
222.21	105 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Classroom 104	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
222.21	104 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
237.22	Classroom 103	2600	5	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.31	793.0	$126.09	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
232.21		2600	12	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	$426.63	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2246.4	$357.18	$21.00	$252.00	0.17	436.8	$69.45	3.63
232.21	Classroom 102	2600	18	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.55	4,024.8	$639.94	18	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.30	3369.6	$535.77	$21.00	$378.00	0.25	655.2	$104.18	3.63
222.21	102 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Classroom 101	2600	17	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.46	3,801.2	$604.39	17	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.22	3182.4	$506.00	$21.00	$357.00	0.24	618.8	$98.39	3.63
222.21	101 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64

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ECM 1&2: Lighting Upgrade - General & Gym

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
242.21	Resourse Room	2600	8	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.87	2,267.2	$360.48	8	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.78	2038.4	$324.11	$28.00	$224.00	0.09	228.8	$36.38	6.16
221.11	Closet	1200	1	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Storage	1200	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	117.6	$18.70	$14.00	$28.00	0.03	31.2	$4.96	5.64
222.21	Electrical Closet	1200	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	117.6	$18.70	$14.00	$28.00	0.03	31.2	$4.96	5.64
242.21	Music	2600	8	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.87	2,267.2	$360.48	8	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.78	2038.4	$324.11	$28.00	$224.00	0.09	228.8	$36.38	6.16
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
231.34	Art 115	2600	20	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., No Lens	86	1.72	4,472.0	$711.05	20	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.44	3744	$595.30	$21.00	$420.00	0.28	728	$115.75	3.63
232.21		2600	4	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	894.4	$142.21	4	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.29	748.8	$119.06	$21.00	$84.00	0.06	145.6	$23.15	3.63
222.21	Kiln	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
222.21	115 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Classroom 200	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
242.24	Library	2600	34	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., No Lens	109	3.71	9,635.6	$1,532.06	34	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	3.33	8663.2	$1,377.45	$28.00	$952.00	0.37	972.4	$154.61	6.16
221.34		2600	3	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., No Lens	62	0.19	483.6	$76.89	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.15	382.2	$60.77	$14.00	$42.00	0.04	101.4	$16.12	2.61
237.21		2600	2	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.18	478.4	$76.07	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
560		2600	18	1	Recessed, 13w PL Lamp	13	0.23	608.4	$96.74	18	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Library Office	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
222.21	Library Office	2600	3	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	483.6	$76.89	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.15	382.2	$60.77	$14.00	$42.00	0.04	101.4	$16.12	2.61
221.33	Computer Room	2600	9	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	62	0.56	1,450.8	$230.68	9	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.44	1146.6	$182.31	$14.00	$126.00	0.12	304.2	$48.37	2.61
221.33	Computer Room	8760	9	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	62	0.56	4,888.1	$777.20	9	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.44	3863.16	$614.24	$14.00	$126.00	0.12	1024.92	$162.96	0.77

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EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
222.21	Electrical Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
242.24	Hub Room	2600	2	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., No Lens	109	0.22	566.8	$90.12	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	509.6	$81.03	$28.00	$56.00	0.02	57.2	$9.09	6.16
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
242.21	VP Office	2600	1	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.11	283.4	$45.06	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	$40.51	$28.00	$28.00	0.01	28.6	$4.55	6.16
232.21	Back Office	2600	2	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	$71.10	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	$59.53	$21.00	$42.00	0.03	72.8	$11.58	3.63
242.21	Faculty	2600	9	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.98	2,550.6	$405.55	9	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.88	2293.2	$364.62	$28.00	$252.00	0.10	257.4	$40.93	6.16
237.22		2600	1	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.06	158.6	$25.22	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Café	2600	44	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	4.80	12,469.6	$1,982.67	44	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	4.31	11211.2	$1,782.58	$28.00	$1,232.00	0.48	1258.4	$200.09	6.16
237.21		2600	3	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.28	717.6	$114.10	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Kitchen	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Locker	2600	1	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	$35.55	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	187.2	$29.76	$21.00	$21.00	0.01	36.4	$5.79	3.63
222.21	Kit Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Kit Storage	1200	2	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	206.4	$32.82	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	172.8	$27.48	$21.00	$42.00	0.03	33.6	$5.34	7.86
222.21	Kit Office	2600	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	161.2	$25.63	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	127.4	$20.26	$14.00	$14.00	0.01	33.8	$5.37	2.61
242.21	Classroom 316	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3,400.8	$540.73	12	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.18	3057.6	$486.16	$28.00	$336.00	0.13	343.2	$54.57	6.16
242.21	Classroom 317	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3,400.8	$540.73	12	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.18	3057.6	$486.16	$28.00	$336.00	0.13	343.2	$54.57	6.16
222.21	Corridor 300-317	3000	17	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	1.05	3,162.0	$502.76	17	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.83	2499	$397.34	$14.00	$238.00	0.22	663	$105.42	2.26
222.21	Corridor 300-317	8760	8	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.50	4,345.0	$690.85	8	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.39	3433.92	$545.99	$14.00	$112.00	0.10	911.04	$144.86	0.77
232.21	Classroom 315	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63

Investment Grade Lighting Audit

ECM 1&2: Lighting Upgrade - General & Gym

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
232.21	Classroom 310	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 308	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 313	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 306	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 311	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Guidance	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1,341.6	$213.31	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1123.2	$178.59	$21.00	$126.00	0.08	218.4	$34.73	3.63
222.21	Boy's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
222.21	Electrical Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	PTA	2600	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	161.2	$25.63	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	127.4	$20.26	$14.00	$14.00	0.01	33.8	$5.37	2.61
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Custodial Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Tech Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Classroom 307	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1,341.6	$213.31	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1123.2	$178.59	$21.00	$126.00	0.08	218.4	$34.73	3.63
222.21	Girl's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
232.21	Classroom 300	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 301	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63

Investment Grade Lighting Audit

ECM 1&2: Lighting Upgrade - General & Gym

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
232.21	Classroom 302	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 303	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 304	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 305	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
560	Center Cluster	2600	4	1	Recessed, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
561		2600	4	1	Wall Sconce, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Connecting Corridor	3000	6	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.37	1,116.0	$177.44	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.29	882	$140.24	$14.00	$84.00	0.08	234	$37.21	2.26
222.21	Connecting Corridor	8760	3	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	1,629.4	$259.07	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.15	1287.72	$204.75	$14.00	$42.00	0.04	341.64	$54.32	0.77
560	Cluster 2	2600	4	1	Recessed, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
561		2600	4	1	Wall Sconce, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Connecting Corridor	3000	6	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.37	1,116.0	$177.44	6	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.29	882	$140.24	$14.00	$84.00	0.08	234	$37.21	2.26
222.21	Connecting Corridor	8760	3	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	1,629.4	$259.07	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.15	1287.72	$204.75	$14.00	$42.00	0.04	341.64	$54.32	0.77
222.21	Café Corridor	3000	14	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.87	2,604.0	$414.04	14	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.69	2058	$327.22	$14.00	$196.00	0.18	546	$86.81	2.26
222.21	Main Lobby Men's Room	2600	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	644.8	$102.52	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.20	509.6	$81.03	$14.00	$56.00	0.05	135.2	$21.50	2.61
221.11		2600	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
222.21	Main Lobby Women's Room	2600	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	644.8	$102.52	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.20	509.6	$81.03	$14.00	$56.00	0.05	135.2	$21.50	2.61
221.11		2600	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
232.21	Classroom 100	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
237.22		2600	2	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.12	317.2	$50.43	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

ECM 1&2: Lighting Upgrade - General & Gym

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
222.21	100 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Nurse	2600	12	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	$426.63	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2246.4	$357.18	$21.00	$252.00	0.17	436.8	$69.45	3.63
222.21	Nurse's Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
237.21	Conf. Room	2600	9	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.83	2,152.8	$342.30	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Women's Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Men's Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
242.21	Classroom 216	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3,400.8	$540.73	12	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.18	3057.6	$486.16	$28.00	$336.00	0.13	343.2	$54.57	6.16
242.21	Classroom 217	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3,400.8	$540.73	12	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.18	3057.6	$486.16	$28.00	$336.00	0.13	343.2	$54.57	6.16
222.21	Corridor 200-217	3000	25	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	1.55	4,650.0	$739.35	25	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	1.23	3675	$584.33	$14.00	$350.00	0.33	975	$155.03	2.26
232.21	Classroom 215	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 210	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 208	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 213	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 206	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 211	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Guidance	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1,341.6	$213.31	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1123.2	$178.59	$21.00	$126.00	0.08	218.4	$34.73	3.63
222.21	Boy's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
222.21	Electrical Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64

Investment Grade Lighting Audit

ECM 1&2: Lighting Upgrade - General & Gym

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Custodial Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
222.21	Tech Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.05	58.8	$9.35	$14.00	$14.00	0.01	15.6	$2.48	5.64
232.21	Classroom 207	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1,341.6	$213.31	6	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.43	1123.2	$178.59	$21.00	$126.00	0.08	218.4	$34.73	3.63
222.21	Girl's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	49	0.10	254.8	$40.51	$14.00	$28.00	0.03	67.6	$10.75	2.61
232.21	Classroom 200	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 201	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 202	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 203	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 204	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
232.21	Classroom 205	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3,354.0	$533.29	15	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.08	2808	$446.47	$21.00	$315.00	0.21	546	$86.81	3.63
	Totals		1,257	404				294,658	$46,851	1,257	351			82.8	224,210	$35,649		$28,582	19.4	52,836	$8,401	3.40

CEG Job #: 9C11058
Project: Montgomery TWP. LGEA — Village Elementary School — **KWH COST:** $0.159
Address: 0
0
Building SF: -

ECM 3: 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
237.21	Main Office	2600	19	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	1.75	4544.8	$722.62	19	1	Dual Technology Occupancy Sensor - Remote Mnt.	92	1.40	20%	3635.84	$578.10	$300.00	$300.00	0.35	908.96	$144.52	2.08
237.21	Office #1	2600	4	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.37	956.8	$152.13	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	92	0.29	20%	765.44	$121.70	$150.00	$150.00	0.07	191.36	$30.43	4.93
237.21	Office #2	2600	6	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.55	1435.2	$228.20	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	92	0.44	20%	1148.16	$182.56	$150.00	$150.00	0.11	287.04	$45.64	3.29
222.21	Office #3	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	257.92	$41.01	$150.00	$150.00	0.02	64.48	$10.25	14.63
221.11	Electrical Closet	1200	6	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	446.4	$70.98	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.30	20%	357.12	$56.78	$150.00	$150.00	0.07	89.28	$14.20	10.57
222.21	Copy Room	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.10	20%	257.92	$41.01	$150.00	$150.00	0.02	64.48	$10.25	14.63
232.21	Classroom 111	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4248.4	$675.50	19	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.31	20%	3398.72	$540.40	$450.00	$450.00	0.33	849.68	$135.10	3.33
237.21	111 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	92	0.09	0%	110.4	$17.55	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 108	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4248.4	$675.50	19	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.31	20%	3398.72	$540.40	$450.00	$450.00	0.33	849.68	$135.10	3.33
237.21	108 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	92	0.09	0%	110.4	$17.55	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 113	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4248.4	$675.50	19	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.31	20%	3398.72	$540.40	$450.00	$450.00	0.33	849.68	$135.10	3.33
237.21	113 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	92	0.09	0%	110.4	$17.55	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 110	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4248.4	$675.50	19	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.31	20%	3398.72	$540.40	$450.00	$450.00	0.33	849.68	$135.10	3.33
237.21	110 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	92	0.09	0%	110.4	$17.55	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor 113 - El Rm	3000	15	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.93	2790	$443.61	15	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	62	0.74	20%	2232	$354.89	$450.00	$450.00	0.19	558	$88.72	5.07

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
221.34	113 Exit	3000	1	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., No Lens	62	0.06	186	$29.57	1	0	No Change	62	0.06	0%	186	$29.57	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 109	2600	19	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4248.4	$675.50	19	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack - Remote Mnt.	86	1.31	20%	3398.72	$540.40	$450.00	$450.00	0.33	849.68	$135.10	3.33
237.21	109 Restroom	1200	1	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.09	110.4	$17.55	1	0	No Change	92	0.09	0%	110.4	$17.55	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Guidance Office	2600	6	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.37	951.6	$151.30	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	61	0.29	20%	761.28	$121.04	$150.00	$150.00	0.07	190.32	$30.26	4.96
237.22	Office 1	2600	4	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.24	634.4	$100.87	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	61	0.20	20%	507.52	$80.70	$150.00	$150.00	0.05	126.88	$20.17	7.44
237.22	Office 2	2600	3	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.18	475.8	$75.65	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	61	0.15	20%	380.64	$60.52	$150.00	$150.00	0.04	95.16	$15.13	9.91
237.22	Office 3	2600	3	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.18	475.8	$75.65	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	61	0.15	20%	380.64	$60.52	$150.00	$150.00	0.04	95.16	$15.13	9.91
242.24	Office 4	2600	3	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., No Lens	109	0.33	850.2	$135.18	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	109	0.26	20%	680.16	$108.15	$150.00	$150.00	0.07	170.04	$27.04	5.55
222.21	Corridor 106 - ML	3000	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	744	$118.30	4	0	No Change	62	0.25	0%	744	$118.30	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor 106 - ML	8760	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	1086.24	$172.71	2	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.04	70%	325.872	$51.81	$600.00	$600.00	0.09	760.368	$120.90	4.96
222.21	Corridor - Gym	3000	6	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.37	1116	$177.44	6	0	No Change	62	0.37	0%	1116	$177.44	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor - Gym	8760	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	2172.48	$345.42	4	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.07	70%	651.744	$103.63	$600.00	$600.00	0.17	1520.736	$241.80	2.48
770	Gym	2600	20	1	2x2 Recessed 400w MH, Prismatic Lens	465	9.30	24180	$3,844.62	20	2	Dual Technology Occupancy Sensor - Remote Mnt.	465	7.44	20%	19344	$3,075.70	$300.00	$600.00	1.86	4836	$768.92	0.78
222.21	Custodial Closet	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
221.31	Mech Room	3000	17	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	1.05	3162	$502.76	17	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack - Remote Mnt.	62	0.84	20%	2529.6	$402.21	$450.00	$450.00	0.21	632.4	$100.55	4.48
221.31	Stage	1800	7	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.43	781.2	$124.21	7	0	No Change	62	0.43	0%	781.2	$124.21	$0.00	$0.00	0.00	0	$0.00	0.00

ECM 3: 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
237.22	Gym Corridor	3000	3	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.18	549	$87.29	3	0	No Change	61	0.18	0%	549	$87.29	$0.00	$0.00	0.00	0	$0.00	0.00
221.11	Gym Storage	1200	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	0	No Change	62	0.12	0%	148.8	$23.66	$0.00	$0.00	0.00	0	$0.00	0.00
221.11	Storage	1200	6	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.37	446.4	$70.98	6	0	No Change	62	0.37	0%	446.4	$70.98	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Gym Office	2600	8	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.49	1268.8	$201.74	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	61	0.39	20%	1015.04	$161.39	$150.00	$150.00	0.10	253.76	$40.35	3.72
221.31	Gym Restroom	2600	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
221.31	Gym Storage	1200	3	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.19	223.2	$35.49	3	0	No Change	62	0.19	0%	223.2	$35.49	$0.00	$0.00	0.00	0	$0.00	0.00
221.31	Gym Storage - Upper	1200	4	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.25	297.6	$47.32	4	0	No Change	62	0.25	0%	297.6	$47.32	$0.00	$0.00	0.00	0	$0.00	0.00
221.31	Gym Storage	1200	5	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.31	372	$59.15	5	0	No Change	62	0.31	0%	372	$59.15	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Lobby	3000	15	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.64	4905	$779.90	15	0	No Change	109	1.64	0%	4905	$779.90	$0.00	$0.00	0.00	0	$0.00	0.00
221.14		3000	36	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., No Lens	62	2.23	6696	$1,064.66	36	0	No Change	62	2.23	0%	6696	$1,064.66	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Closet - ML	1200	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	0	No Change	62	0.12	0%	148.8	$23.66	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor 104	3000	9	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.56	1674	$266.17	9	0	No Change	62	0.56	0%	1674	$266.17	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor 104	8760	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	2172.48	$345.42	4	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.07	70%	651.744	$103.63	$600.00	$600.00	0.17	1520.736	$241.80	2.48
232.21	Classroom 105	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.03	20%	2683.2	$426.63	$450.00	$450.00	0.26	670.8	$106.66	4.22
222.21	105 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 104	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.03	20%	2683.2	$426.63	$450.00	$450.00	0.26	670.8	$106.66	4.22

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
222.21	104 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
237.22	Classroom 103	2600	5	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.31	793	$126.09	5	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	61	0.24	20%	634.4	$100.87	$450.00	$450.00	0.06	158.6	$25.22	4.07
232.21		2600	12	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2683.2	$426.63	12			86	0.83	20%	2146.56	$341.30			0.21	536.64	$85.33	
232.21	Classroom 102	2600	18	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.55	4024.8	$639.94	18	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.24	20%	3219.84	$511.95	$450.00	$450.00	0.31	804.96	$127.99	3.52
222.21	102 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 101	2600	17	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.46	3801.2	$604.39	17	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.17	20%	3040.96	$483.51	$450.00	$450.00	0.29	760.24	$120.88	3.72
222.21	101 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Resourse Room	2600	8	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.87	2267.2	$360.48	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	109	0.70	20%	1813.76	$288.39	$150.00	$150.00	0.17	453.44	$72.10	2.08
221.11	Closet	1200	1	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Storage	1200	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	0	No Change	62	0.12	0%	148.8	$23.66	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Electrical Closet	1200	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	$23.66	2	0	No Change	62	0.12	0%	148.8	$23.66	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Music	2600	8	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.87	2267.2	$360.48	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	109	0.70	20%	1813.76	$288.39	$300.00	$300.00	0.17	453.44	$72.10	4.16
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
231.34	Art 115	2600	20	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., No Lens	86	1.72	4472	$711.05	20	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.38	20%	3577.6	$568.84	$450.00	$450.00	0.34	894.4	$142.21	3.16
232.21		2600	4	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	894.4	$142.21	4	0	No Change	86	0.34	0%	894.4	$142.21	$0.00	$0.00	0.00	0	$0.00	0.00

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
222.21	Kiln	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	115 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 200	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	86	1.03	20%	2683.2	$426.63	$450.00	$450.00	0.26	670.8	$106.66	4.22
242.24	Library	2600	34	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., No Lens	109	3.71	9635.6	$1,532.06	34	2	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	109	2.96	20%	7708.48	$1,225.65	$450.00	$900.00	0.74	1927.12	$306.41	2.94
221.34		2600	3	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., No Lens	62	0.19	483.6	$76.89	3			62	0.15	20%	386.88	$61.51			0.04	96.72	$15.38	
237.21		2600	2	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.18	478.4	$76.07	2	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	92	0.15	20%	382.72	$60.85	$450.00	$450.00	0.04	95.68	$15.21	9.01
560		2600	18	1	Recessed, 13w PL Lamp	13	0.23	608.4	$96.74	18			13	0.19	20%	486.72	$77.39			0.05	121.68	$19.35	
222.21	Library Office	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Library Office	2600	3	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	483.6	$76.89	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	386.88	$61.51	$150.00	$150.00	0.04	96.72	$15.38	9.75
221.33	Computer Room	2600	9	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	62	0.56	1450.8	$230.68	9	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	62	0.45	20%	1160.64	$184.54	$450.00	$450.00	0.11	290.16	$46.14	9.75
221.33	Computer Room	8760	9	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	62	0.56	4888.08	$777.20	9	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.17	70%	1466.424	$233.16	$600.00	$600.00	0.39	3421.656	$544.04	1.10
222.21	Electrical Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
242.24	Hub Room	2600	2	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., No Lens	109	0.22	566.8	$90.12	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	109	0.17	20%	453.44	$72.10	$150.00	$150.00	0.04	113.36	$18.02	8.32
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	VP Office	2600	1	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.11	283.4	$45.06	1	0	No Change	109	0.11	0%	283.4	$45.06	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Back Office	2600	2	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	$71.10	2	0	No Change	86	0.17	0%	447.2	$71.10	$0.00	$0.00	0.00	0	$0.00	0.00

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS											SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
242.21	Faculty	2600	9	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	0.98	2550.6	$405.55	9	1	Dual Technology Occupancy Sensor - Remote Mnt.	109	0.78	20%	2040.48	$324.44	$300.00	$300.00	0.20	510.12	$81.11	3.70
237.22		2600	1	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.06	158.6	$25.22	1	0	No Change	61	0.06	0%	158.6	$25.22	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Café	2600	44	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	4.80	12469.6	$1,982.67	44	2	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	109	3.84	20%	9975.68	$1,586.13	$450.00	$900.00	0.96	2493.92	$396.53	2.27
237.21		2600	3	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.28	717.6	$114.10	3	0	No Change	92	0.28	0%	717.6	$114.10	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Kitchen	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Locker	2600	1	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	$35.55	1	0	No Change	86	0.09	0%	223.6	$35.55	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Kit Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Kit Storage	1200	2	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	206.4	$32.82	2	0	No Change	86	0.17	0%	206.4	$32.82	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Kit Office	2600	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	161.2	$25.63	1	0	No Change	62	0.06	0%	161.2	$25.63	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Classroom 316	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3400.8	$540.73	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	109	1.05	20%	2720.64	$432.58	$300.00	$300.00	0.26	680.16	$108.15	2.77
242.21	Classroom 317	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3400.8	$540.73	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	109	1.05	20%	2720.64	$432.58	$300.00	$300.00	0.26	680.16	$108.15	2.77
222.21	Corridor 300-317	3000	17	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	1.05	3162	$502.76	17	0	No Change	62	1.05	0%	3162	$502.76	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Corridor 300-317	8760	8	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.50	4344.96	$690.85	8	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.15	70%	1303.488	$207.25	$600.00	$600.00	0.35	3041.472	$483.59	1.24
232.21	Classroom 315	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 310	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 308	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
232.21	Classroom 313	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 306	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 311	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Guidance	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1341.6	$213.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1073.28	$170.65	$150.00	$150.00	0.10	268.32	$42.66	3.52
222.21	Boy's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Electrical Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	PTA	2600	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	161.2	$25.63	1	0	No Change	62	0.06	0%	161.2	$25.63	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Custodial Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Tech Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 307	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1341.6	$213.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1073.28	$170.65	$150.00	$150.00	0.10	268.32	$42.66	3.52
222.21	Girl's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 300	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
232.21	Classroom 301	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 302	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 303	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 304	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 305	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
560	Center Cluster	2600	4	1	Recessed, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	13	0.05	0%	135.2	$21.50	$0.00	$0.00	0.00	0	$0.00	0.00
561		2600	4	1	Wall Sconce, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	13	0.05	0%	135.2	$21.50	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Connecting Corridor	3000	6	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.37	1116	$177.44	6	0	No Change	62	0.37	0%	1116	$177.44	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Connecting Corridor	8760	3	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	1629.36	$259.07	3	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.06	70%	488.808	$77.72	$600.00	$600.00	0.13	1140.552	$181.35	3.31
560	Cluster 2	2600	4	1	Recessed, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	13	0.05	0%	135.2	$21.50	$0.00	$0.00	0.00	0	$0.00	0.00
561		2600	4	1	Wall Sconce, 13w PL Lamp	13	0.05	135.2	$21.50	4	0	No Change	13	0.05	0%	135.2	$21.50	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Connecting Corridor	3000	6	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.37	1116	$177.44	6	0	No Change	62	0.37	0%	1116	$177.44	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Connecting Corridor	8760	3	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	1629.36	$259.07	3	1	Watt Stopper ELCU Emergency Lighting Control Unit	62	0.06	70%	488.808	$77.72	$600.00	$600.00	0.13	1140.552	$181.35	3.31
222.21	Café Corridor	3000	14	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.87	2604	$414.04	14	0	No Change	62	0.87	0%	2604	$414.04	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Main Lobby Men's Room	2600	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	644.8	$102.52	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	515.84	$82.02	$150.00	$150.00	0.05	128.96	$20.50	7.32
221.11		2600	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
222.21	Main Lobby Women's Room	2600	4	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	644.8	$102.52	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	515.84	$82.02	$150.00	$150.00	0.05	128.96	$20.50	7.32
221.11		2600	2	2	1x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 100	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
237.22		2600	2	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	61	0.12	317.2	$50.43	2	0	No Change	61	0.12	0%	317.2	$50.43	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	100 Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Nurse	2600	12	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2683.2	$426.63	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.83	20%	2146.56	$341.30	$300.00	$300.00	0.21	536.64	$85.33	3.52
222.21	Nurse's Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
237.21	Conf. Room	2600	9	3	2x2, 3 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Prismatic	92	0.83	2152.8	$342.30	9	1	Dual Technology Occupancy Sensor - Remote Mnt.	92	0.66	20%	1722.24	$273.84	$300.00	$300.00	0.17	430.56	$68.46	4.38
222.21	Women's Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Men's Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Classroom 216	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3400.8	$540.73	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	109	1.05	20%	2720.64	$432.58	$300.00	$300.00	0.26	680.16	$108.15	2.77
242.21	Classroom 217	2600	12	4	2x4, 4 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	109	1.31	3400.8	$540.73	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	109	1.05	20%	2720.64	$432.58	$300.00	$300.00	0.26	680.16	$108.15	2.77
222.21	Corridor 200-217	3000	25	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	1.55	4650	$739.35	25	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	62	1.24	20%	3720	$591.48	$450.00	$450.00	0.31	930	$147.87	3.04
232.21	Classroom 215	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 210	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 208	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
232.21	Classroom 213	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 206	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 211	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Guidance	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1341.6	$213.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1073.28	$170.65	$150.00	$150.00	0.10	268.32	$42.66	3.52
222.21	Boy's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Electrical Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Storage	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Restroom	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Custodial Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
222.21	Tech Closet	1200	1	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	74.4	$11.83	1	0	No Change	62	0.06	0%	74.4	$11.83	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 207	2600	6	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1341.6	$213.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.41	20%	1073.28	$170.65	$150.00	$150.00	0.10	268.32	$42.66	3.52
222.21	Girl's Restroom	2600	2	2	2x4, 2 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	322.4	$51.26	2	0	No Change	62	0.12	0%	322.4	$51.26	$0.00	$0.00	0.00	0	$0.00	0.00
232.21	Classroom 200	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 201	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81

ECM 3: Lighting Controls

EXISTING LIGHTING										PROPOSED LIGHTING CONTROLS										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
232.21	Classroom 202	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 203	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 204	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
232.21	Classroom 205	2600	15	3	2x4, 3 Lamp, 32w 741/ECO T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.29	3354	$533.29	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.03	20%	2683.2	$426.63	$300.00	$300.00	0.26	670.8	$106.66	2.81
	Totals		1,257	404			109.2	294,657.6	$46,851	1,257	49			89.4		234,090.3	$37,220.36		$15,300	19.83	60,567	$9,630	1.59

APPENDIX F

Location Description	Area (Sq FT)	Panel	Qty	Panel Sq Ft	Panel Total Sq Ft	Total KW_{DC}	Total Annual kWh	Total KW_{AC}	Panel Weight (41.9 lbs)	W/SQFT
Village Elementary	10625	SHARP NU-U235F2	470	17.5	8,244	110.45	129,834	89.7	19,693	13.40

.= Proposed PV Layout

Notes:

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

Project Name: LGEA Solar PV Project - Village Elementary School
Location: Montgomery Township, NJ
Description: Photovoltaic System 100% Financing - 15 year

Simple Payback Analysis

	Photovoltaic System 100% Financing - 15 year
Total Construction Cost	$664,542
Annual kWh Production	129,834
Annual Energy Cost Reduction	$19,994
Average Annual SREC Revenue	$50,065

Simple Payback: **9.49** Years

Life Cycle Cost Analysis

Analysis Period (years): 15
Discount Rate: 3%
Average Energy Cost ($/kWh) **$0.154**
Financing Rate: 6.00%
Financing %: 100%
Maintenance Escalation Rate: 3.0%
Energy Cost Escalation Rate: 3.0%
Average SREC Value ($/kWh) $0.386

Period	Additional Cash Outlay	Energy kWh Production	Energy Cost Savings	Additional Maint Costs	SREC Revenue	Interest Expense	Loan Principal	Net Cash Flow	Cumulative Cash Flow
0	$0	0	0	0	$0	0	0	0	0
1	$0	129,834	$19,994	$0	$71,409	$39,106	$28,188	$24,110	$24,110
2	$0	129,185	$20,594	$0	$71,052	$37,367	$29,926	$24,352	$48,462
3	$0	128,539	$21,212	$0	$64,269	$35,521	$31,772	$18,188	$66,650
4	$0	127,896	$21,848	$0	$57,553	$33,562	$33,732	$12,108	$78,759
5	$0	127,257	$22,504	$1,311	$57,266	$31,481	$35,812	$11,165	$89,924
6	$0	126,620	$23,179	$1,304	$56,979	$29,272	$38,021	$11,561	$101,485
7	$0	125,987	$23,874	$1,298	$50,395	$26,927	$40,366	$5,678	$107,163
8	$0	125,357	$24,591	$1,291	$50,143	$24,438	$42,856	$6,149	$113,312
9	$0	124,731	$25,328	$1,285	$43,656	$21,794	$45,499	$406	$113,718
10	$0	124,107	$26,088	$1,278	$43,437	$18,988	$48,305	$954	$114,672
11	$0	123,486	$26,871	$1,272	$37,046	$16,009	$51,285	($4,649)	$110,023
12	$0	122,869	$27,677	$1,266	$36,861	$12,846	$54,448	($4,021)	$106,002
13	$0	122,255	$28,507	$1,259	$30,564	$9,488	$57,806	($9,482)	$96,520
14	$0	121,643	$29,363	$1,253	$30,411	$5,922	$61,371	($8,773)	$87,747
15	$0	121,035	$30,243	$1,247	$24,207	$2,137	$65,156	($14,090)	$73,657
	Totals:	1,880,802	$371,875	$14,063	$725,247	$344,859	$664,542	$73,657	$1,332,202

Net Present Value (NPV) **$71,738**