

MONTGOMERY TOWNSHIP SCHOOLS
ORCHARD HILL ELEMENTARY SCHOOL

244 ORCHARD ROAD
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 (LPLS)
Third Party Supplier:	South Jersey Energy

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.

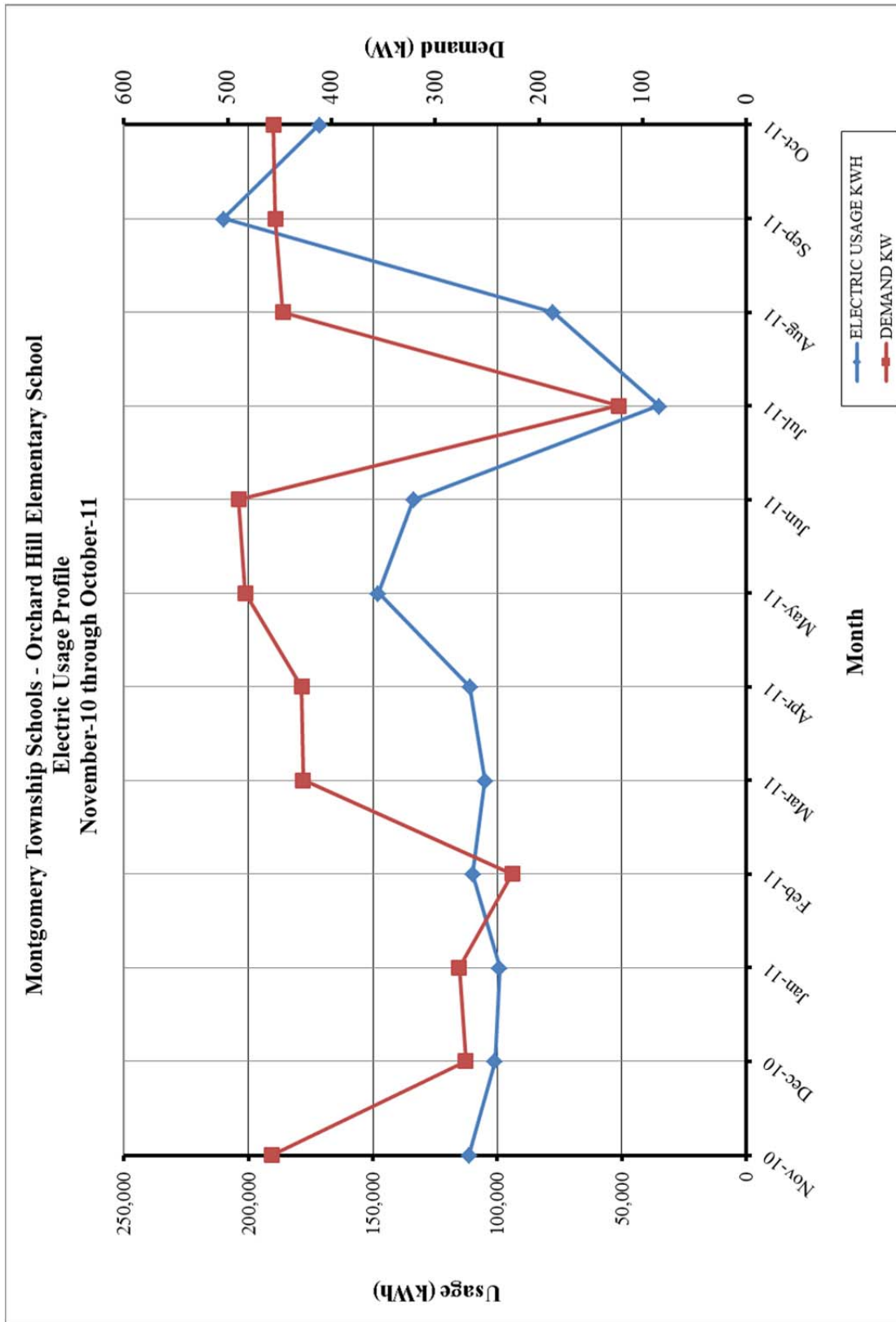
The gas usage profile within each facility report shows the actual natural gas energy usage for the facility. The gas utility measures consumption in cubic feet x 100 (CCF), and converts the quantity into Therms of energy. One Therm is equivalent to 100,000 BTUs of energy.

**Table 1
Electricity Billing Data**

ELECTRIC USAGE SUMMARY			
Utility Provider: PSE&G			
Rate: LPLS			
Meter No: 778020252			
Account # 42 007 272 18 / 67 790 540 03 / 67 790 557 00			
Third Party Utility Provider: South Jersey Energy			
TPS Meter / Acct No: -			
MONTH OF USE	CONSUMPTION KWH	DEMAND KW	TOTAL BILL
Nov-10	111,360	457.6	\$16,723
Dec-10	100,951	270.4	\$14,667
Jan-11	99,148	276.8	\$14,281
Feb-11	109,854	225.6	\$15,505
Mar-11	105,023	427.2	\$15,611
Apr-11	110,935	428.8	\$15,207
May-11	147,861	483.2	\$23,773
Jun-11	133,603	489.6	\$22,134
Jul-11	35,067	123.2	\$6,055
Aug-11	77,543	446.7	\$12,993
Sep-11	209,988	453.9	\$21,423
Oct-11	171,452	455.9	\$17,590
Totals	1,412,785	489.6 Max	\$195,961
AVERAGE DEMAND 378.2 KW average AVERAGE RATE \$0.139 \$/kWh			

Note: Solar panel power production for Orchard Elementary School began on 9/13/2011, therefore monthly billing during September and October 2011 has a blended rate reflecting the electric purchased via the Solar PPA and that from the utility.

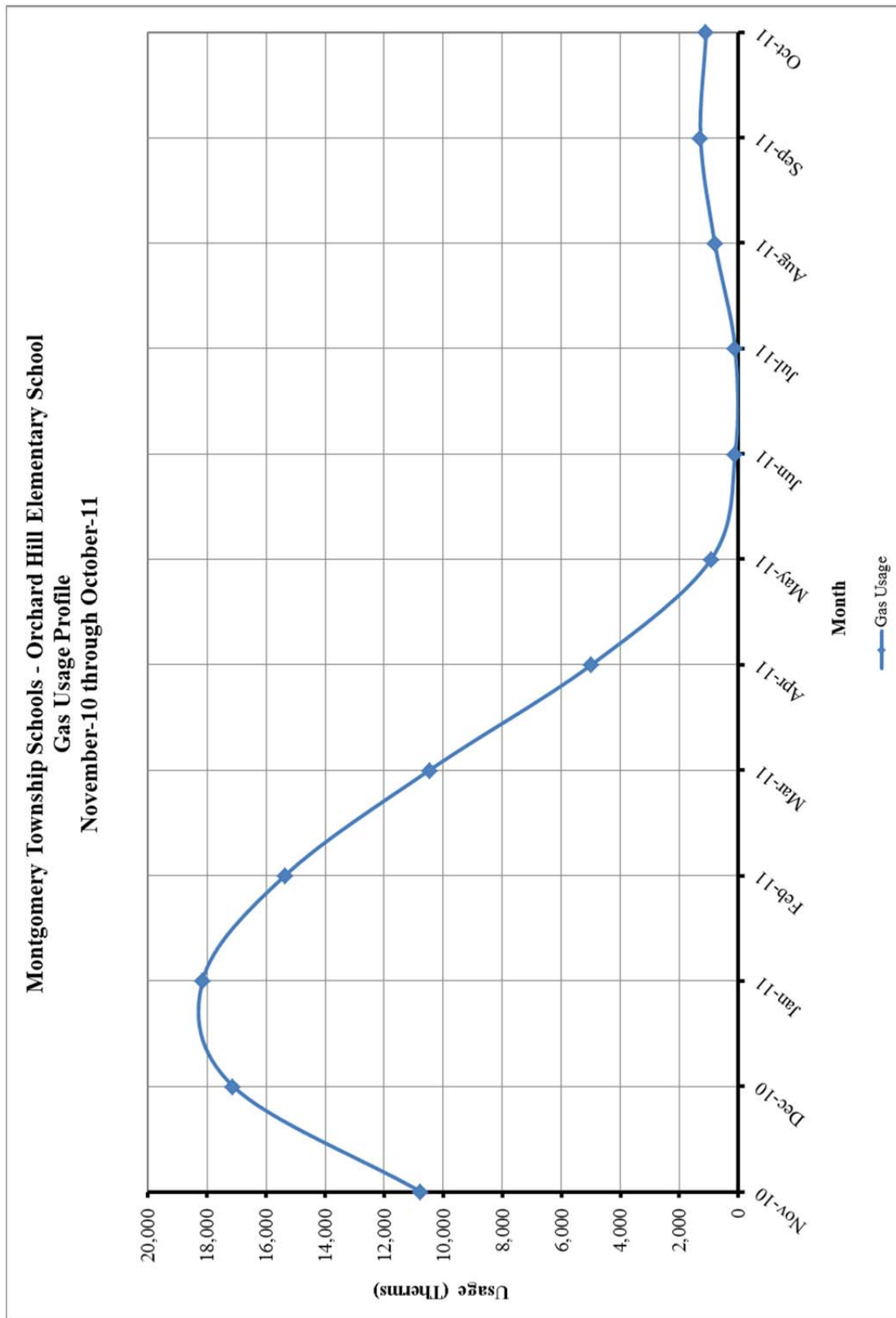
**Figure 1
Electricity Usage Profile**



**Table 4
Natural Gas Billing Data**

NATURAL GAS USAGE SUMMARY		
Utility Provider: PSE&G		
Rate: LVG		
Meter No: 2643359 / 2917367 / 2808973		
Account Number 359646/361975 - 359646/361979 - 35646/361978		
Third Party Utility Provider: HESS		
TPS Meter No: 359646/361975 - 359646/361979 - 35646/361978		
MONTH OF USE	CONSUMPTION (THERMS)	TOTAL BILL
Nov-10	10,767.00	\$11,117.53
Dec-10	17,124.00	\$16,641.55
Jan-11	18,155.00	\$17,683.59
Feb-11	15,358.00	\$15,368.26
Mar-11	10,459.00	\$8,056.10
Apr-11	4,971.00	\$3,995.99
May-11	922.00	\$970.79
Jun-11	111.40	\$375.04
Jul-11	113.50	\$377.03
Aug-11	805.00	\$885.23
Sep-11	1,286.00	\$1,176.31
Oct-11	1,092.00	\$3,433.03
TOTALS	81,163.90	\$80,080.45
AVERAGE RATE:	\$0.99	\$/THERM

Figure 2
Natural Gas Usage Profile



II. FACILITY DESCRIPTION

The Montgomery Township Orchard Hill Elementary School is located on 244 Orchard Road in Skillman, New Jersey. The Orchard Hill Elementary School was built in 1954 and acquired two additions, one in 1963 and another in 1996, resulting in a total square footage of 130,000 for the facility. The Elementary School consists of classrooms, offices, gymnasium(s), an auditorium and cafeteria.

Occupancy Profile

The typical hours of operation for the Orchard Hill Elementary School are Monday through Friday from 7:00 am to 3:15 pm for students but further occupancy occurs from 3:15 pm to 9:30 pm for cleaning. The Orchard Hill Elementary School is also occupied for long durations during Saturday and Sunday during the basketball season from approximately 7:00 am to 4:00 pm. The Orchard Hill Elementary School employs approximately 124 people, with student enrollment estimated to be around 905.

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 and 6 inches of block. The amount of insulation within the walls is not known, but is assumed to be typical for the time period in which it was built. The windows throughout the School are in good condition and appear to be well maintained. Typical windows throughout facility are double pane, 1/4" tinted glass with aluminum frames. The majority of the roof is a flat, built up rubber roof with stone ballasts but the science wing has a flat built up rubber roof only. The amount of insulation below the roofing is unknown.

HVAC Systems

The Orchard Hill Elementary School classrooms are served by a 4-pipe system circulating hot and chilled water. Larger spaces such as the auditoriums and gymnasiums are served by large air handling units with hot and chilled water coils.

The Orchard Hill Elementary School is divided into three buildings; east, central and west.

The boiler plant for the east section consists of two Aerco Benchmark 2.0 boilers. The boilers are gas-fired, hot water boilers, each with inputs of 2,000 MBH and outputs of approximately 1,800 MBH with an estimated efficiency of 88%. These boilers were installed in 2006.

The boiler plant for the central section consists of two Weil McLain LGB-10 boilers. The boilers are gas-fired, hot water boilers, each with inputs of 1,170 MBH and outputs of approximately 950 MBH with an estimated efficiency of 80%. These boilers were installed in 1996.

The boiler plant for the west section consists of two Aerco Benchmark 3.0 boilers. The boilers are gas-fired, hot water boilers, each with inputs of 3,000 MBH and outputs of approximately 2,800 MBH with an estimated efficiency of 88%. These boilers were installed in 2006.

All boiler plants are within their ASHRAE recommended service life for a boiler.

Hot water is circulated throughout the building's heating hot water loop via eight base mounted, end suction pumps. Two 20 HP pumps are located in the east boiler room and are rated for 252 GPM at 164 feet of head. Two 15 HP pumps are located in the central boiler room and are rated for 215 GPM at 155 feet of head. Lastly, two 15 HP pumps are located in the west boiler room and are rated for 215 GPM at 155 feet of head and two 7.5 HP pumps are rated for 300 GPM at 62 feet of head. With the exception of the central mechanical room HW pumps, all pump motors are NEMA premium high efficiency Baldor motors.

Cooling throughout the Orchard Hill Elementary School is provided by four air cooled chillers located outside the central boiler room. These chillers are manufactured by McQuay and are rated for 110 tons each and have a cooling efficiency of approximately 1.22 KW/Ton. All of the unit ventilators and air handling units are equipped with chilled water coils which these chillers serve. Located in the central boiler room are two 30 HP chilled water pumps rated for 830 GPM at 115 feet of head. These units are all in good condition and are well within their useful service life as defined by ASHRAE.

Exhaust System

Air is exhausted from classrooms and toilet rooms through the roof mounted 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

Domestic hot water distribution is divided into three sections, similar to the boiler plants. The domestic hot water for the east section is provided by an AO Smith BTH-199A-970. This heater has a storage capacity of 100 gallons with an input of 200 MBH. The central section of the building is being supplied domestic hot water via a Bock 361PG domestic hot water heater. This heater has a storage capacity of 113 gallons and an input of 385 MBH. Lastly, the domestic hot water for the west section is provided by an AO Smith BTH 199 100. This heater has a storage capacity of 100 gallons with an input of 200 MBH. All the domestic hot water systems in this building are in good condition and are 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 manufacturer's 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	\$30,864	\$8,782	3.5	326.8%
ECM #2	Gym Lighting Upgrade	\$6,460	\$1,829	3.5	324.7%
ECM #3	Lighting Controls Upgrade	\$23,650	\$8,399	2.8	432.7%
ECM #4	Boiler Replacement	\$84,639	\$3,008	28.1	-14.7%
ECM #5	VFD on Hot Water Pumps	\$311,700	\$8,381	37.2	-46.2%
ECM #6	VFD on Chilled Water Pumps	\$266,063	\$2,924	91.0	-78.0%
Notes:	A. Cost takes into consideration applicable NJ Smart Start TM 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	24.60	63,182	0
ECM #2	Gym Lighting Upgrade	4.83	13,157	0
ECM #3	Lighting Controls Upgrade	23.13	60,425	0
ECM #4	Boiler Replacement	0.00	0	3,038
ECM #5	VFD on Hot Water Pumps	0.00	60,294	0
ECM #6	VFD on Chilled Water Pumps	0.00	21,036	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	\$8,782	\$31,244	\$380	\$30,864	3.5
Gym Lighting Upgrade	\$1,829	\$8,360	\$1,900	\$6,460	3.5
Lighting Controls Upgrade	\$8,399	\$26,400	\$2,750	\$23,650	2.8
Boiler Replacement	\$3,008	\$89,014	\$4,375	\$84,639	28.1
VFD on Hot Water Pumps	\$8,381	\$311,908	\$208	\$311,700	37.2
VFD on Chilled Water Pumps	\$2,924	\$269,663	\$3,600	\$266,063	91.0
<i>Design / Construction Extras (15%)</i>		\$23,253		\$23,253	
Total Project	\$22,018	\$178,271	\$9,405	\$168,866	7.7

Note: ECM's with the strike-through font are not included in the ESIP.

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 Orchard Elementary School is provided with fluorescent fixtures with older generation, 700 series 32W T8 lamps and electronic ballasts. Although 700 series T8 lamps are considered fairly efficient, further energy savings can be achieved by replacing the existing T8 lamps with new generation, 800 series 28W T8 lamps without compromising light output. CEG recommends, re-lamping all of the fixtures with 28W T8 lamps. In addition, the receiving area and a classroom area still have incandescent lamps. 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 (\$):	\$31,244
NJ Smart Start Equipment Incentive (\$):	\$380
Net Installation Cost (\$):	\$30,864
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$9,414
Total Yearly Savings (\$/Yr):	\$9,414
Estimated ECM Lifetime (Yr):	15
Simple Payback	3.3
Simple Lifetime ROI	357.5%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$141,210
Internal Rate of Return (IRR)	30%
Net Present Value (NPV)	\$81,519.72

ECM #2: Lighting Upgrade – Gymnasium / Multi-Purpose Room

Description:

The west gymnasium, east gymnasium, and multi-purpose room at Orchard Elementary School are currently lit via 250 W, 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-8 Lo Bay lighting system that includes new lighting fixtures with high efficiency, electronic ballasts and T-8 Lo Bay fixtures.

This measure replaces all the HID, 250 W HID MH fixtures with a well-designed T-8 Lo-Bay lighting system. Thirty eight, 6-lamp T-8 Lo 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 250 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 (\$):	\$8,360
NJ Smart Start Equipment Incentive (\$):	\$1,900
Net Installation Cost (\$):	\$6,460
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$1,960
Total Yearly Savings (\$/Yr):	\$1,960
Estimated ECM Lifetime (Yr):	15
Simple Payback	3.3
Simple Lifetime ROI	355.1%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$29,400
Internal Rate of Return (IRR)	30%
Net Present Value (NPV)	\$16,938.35

ECM #3: Lighting Controls Upgrade – Occupancy Sensors

Description:

Some of the lights in the Orchard 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.

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 libraries. Sensors shall be manufactured by SensorSwitch, Watt Stopper or equivalent. The **Investment Grade Lighting Audit Appendix** of this report includes the summary of lighting controls implemented in this ECM and outlines the proposed controls,

costs, savings, and payback periods. The calculations adjust the lighting power usage by the applicable percent savings for each area that includes lighting controls.

Energy Savings Calculations:

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

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

Rebates and Incentives:

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

$$\begin{aligned} \text{Smart Start Incentive} &= (\# \text{ Wall mount sensors} \times \$20 \text{ per sensor}) \\ &+ (\# \text{ Ceiling mount sensors} \times \$35 \text{ per sensor}) \end{aligned}$$

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$26,400
NJ Smart Start Equipment Incentive (\$):	\$2,750
Net Installation Cost (\$):	\$23,650
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$9,003
Total Yearly Savings (\$/Yr):	\$9,003
Estimated ECM Lifetime (Yr):	15
Simple Payback	2.6
Simple Lifetime ROI	471.0%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$135,045
Internal Rate of Return (IRR)	38%
Net Present Value (NPV)	\$83,827.23

ECM #4: Condensing Boiler Installation

Description:

The existing cast iron boilers are used as the primary source of heat for the central area of the Orchard Hill Elementary School. The existing boilers are at 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 temperature.

This ECM includes installation of two condensing gas fired boilers to replace the existing cast iron boilers. The basis for this ECM is Aerco condensing boilers; model number BMK – 1.5 and 1.0. The boiler installation is based on a one for one replacement based on capacity of the existing boiler.

Energy Savings Calculations:

Baseline Hot Water Gas Use: 7,511 Therms

Existing Heating Natural Gas: 81,164 Therms – (7,511 Therms) = 73,653 Therms

$$\text{Bldg Heat Required} = \text{Existing Nat Gas (Therms)} \times \text{Heating Eff. (\%)} \times \text{Fuel Heat Value} \left(\frac{\text{BTU}}{\text{Therm}} \right)$$

$$\text{Proposed Heating Gas Usage} = \frac{\text{Bldg Heat Required (BTU)}}{\text{Heating Eff. (\%)} \times \text{Fuel Heat Value} \left(\frac{\text{BTU}}{\text{Therm}} \right)}$$

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

CONDENSING BOILER CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Existing Cast Iron Boilers	New Condensing Boilers	
Existing Nat Gas (Therms)	24,305	0	
Boiler Efficiency (%)	77%	88%	11%
Nat Gas Heat Value (BTU/Therm)	100,000	100,000	
Equivalent Building Heat Usage (MMBTUs)	1,872	1,872	
Gas Cost (\$/Therm)	0.99	0.99	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Natural Gas Usage (Therms)	24,305	21,267	3,038
Energy Cost (\$)	\$24,062	\$21,055	\$3,008
COMMENTS:			

From the **NJ Smart Start Appendix**, the installation of new condensing boilers warrants the following incentive: \$1.75 per MBH.

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$89,014
NJ Smart Start Equipment Incentive (\$):	\$4,375
Net Installation Cost (\$):	\$84,639
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$3,008
Total Yearly Savings (\$/Yr):	\$3,008
Estimated ECM Lifetime (Yr):	24
Simple Payback	28.1
Simple Lifetime ROI	-14.7%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$72,192
Internal Rate of Return (IRR)	-1%
Net Present Value (NPV)	(\$33,696.89)

ECM #5: Install VFD on Hot Water Pumps

Description:

The hot water system at the Orchard Elementary School utilizes eight constant speed pumps to circulate hot water from the three different boiler plants throughout the building. Based on the survey of the existing equipment it appears that the hot water unit ventilators have 3-way control valves for flow control. 3-way control valves allow constant flow of the water loop, requiring full pumping energy continuously, unlike 2-way control valves that provide flow through the heat exchanger equipment only when there is a call for heating, and allow the system to reduce flow when it is not needed.

This ECM includes the installation of Variable Frequency Drives on the two, 7.5 horsepower, four, 15 horsepower and two, 20 horsepower existing hot water pumps. The VFD control is based on a differential pressure sensor in the water loop to measure demand for water. This ECM also includes replacement of the two existing pump motors in the central boiler room with inverter duty motors that meet NEMA Premium Efficiency Standard, which also helps to reduce energy consumption. Additionally, the 3-way control valves must be replaced in all the unit ventilators throughout the system to enable the variable volume system to function properly.

Energy Savings Calculations:

$$\text{Pump Power HP} = \frac{\text{Flow}_{\text{GPM}} \times \text{Head}_{\text{ft-hd.}}}{3650 \times \eta_{\text{pump}} \times \eta_{\text{motor}}}$$

$$\text{Energy Consumption (kWh)} = \text{Motor HP} \times 0.746 \frac{\text{kW}}{\text{HP}} \times \text{Hours of operation (Hr)} \times \frac{1}{\eta_{\text{motor}}}$$

$$\text{Total Energy Consumption (kWh)} = \sum \text{Energy Consumption of Each Motor}$$

$$\text{Energy Cost (\$)} = \text{Total Consumption(kWh)} \times \text{Average Cost of Electric} \left(\frac{\$}{\text{kWh}} \right)$$

Affinity Laws are used in order to calculate energy savings by calculating the reduced power consumption requirement based a reduction in flow. Affinity laws, are as following:

Q = Flow, n = RPM, p = total pressure

$$\frac{Q_2}{Q_1} = \frac{n_2}{n_1} \quad \frac{p_2}{p_1} = \left(\frac{n_2}{n_1} \right)^2 \quad \frac{HP_2}{HP_1} = \left(\frac{n_2}{n_1} \right)^3$$

VFD Calculation for 7.5 Horsepower Pumps in West Boiler Room

HOT WATER SET #1 PUMPS VFD CALULATION			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	7.5	7.5	
Flow* (GPM)	300	300	-
Head* (Ft)	62	62	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	91.0%	91.0%	0.0%
Operating Hrs	5054	5054	-
Estimated Power (HP)	6.9	6.9	0.00
Elec Cost (\$/kWh)	0.139	0.139	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Electric Energy (kWh)	28,513	17,556	10,957
Electric Energy Cost (\$)	\$3,963	\$2,440	\$1,523
COMMENTS:			

VFD Calculation for 15 Horsepower Pumps in West Boiler Room

HOT WATER SET #2 PUMPS VFD CALULATION			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	15.0	15.0	
Flow* (GPM)	215	215	-
Head* (Ft)	155	155	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	93.0%	93.0%	0.0%
Operating Hrs	5054	5054	-
Estimated Power (HP)	12.1	12.1	0.00
Elec Cost (\$/kWh)	0.139	0.139	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Electric Energy (kWh)	48,913	34,275	14,638
Electric Energy Cost (\$)	\$6,799	\$4,764	\$2,035
COMMENTS:			

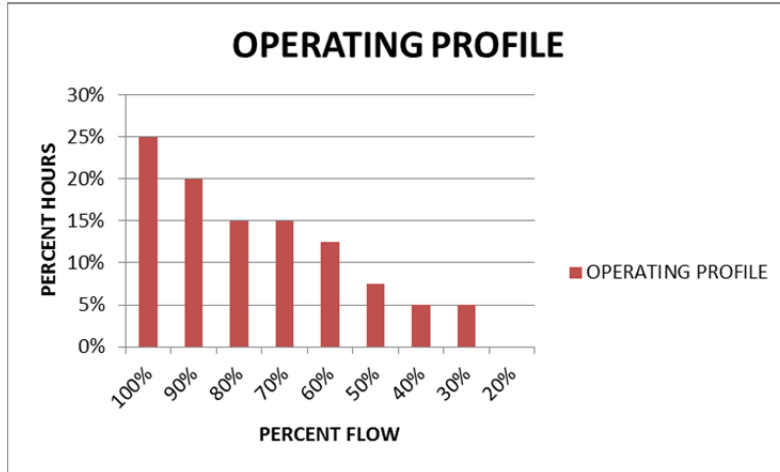
VFD Calculation for 20 Horsepower Pumps in Central Boiler Room

HOT WATER SET #3 PUMPS VFD CALCULATION			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	20.0	20.0	
Flow* (GPM)	252	252	-
Head* (Ft)	164	164	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	93.0%	93.0%	0.0%
Operating Hrs	5054	5054	-
Estimated Power (HP)	15.0	15.0	0.00
Elec Cost (\$/kWh)	0.139	0.139	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Electric Energy (kWh)	60,659	45,699	14,960
Electric Energy Cost (\$)	\$8,432	\$6,352	\$2,079
COMMENTS:			

VFD Calculation for 15 Horsepower Pumps in East Boiler Room

HOT WATER SET #4 PUMPS VFD CALCULATION			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	15.0	15.0	
Flow* (GPM)	215	215	-
Head* (Ft)	155	155	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	88.5%	93.0%	4.5%
Operating Hrs	5054	5054	-
Estimated Power (HP)	12.7	12.1	0.61
Elec Cost (\$/kWh)	0.139	0.139	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Electric Energy (kWh)	54,013	34,275	19,739
Electric Energy Cost (\$)	\$7,508	\$4,764	\$2,744
COMMENTS:			

Estimated Operating Profile with VFD



Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$311,908
NJ Smart Start Equipment Incentive (\$):	\$208
Net Installation Cost (\$):	\$311,700
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$8,381
Total Yearly Savings (\$/Yr):	\$8,381
Estimated ECM Lifetime (Yr):	20
Simple Payback	37.2
Simple Lifetime ROI	-46.2%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$167,620
Internal Rate of Return (IRR)	-5%
Net Present Value (NPV)	(\$187,012.20)

ECM # 6: Install VFD on Chilled Water Pumps

Description:

The chilled water system at the Orchard Hill Elementary School utilizes two constant speed pumps to circulate chilled water from the air cooled chiller at the mechanical room throughout the building. Based on the survey of the existing equipment it appears that the chilled water air handlers have 3-way control valves for flow control. 3-way control valves allow constant flow of the water loop, requiring full pumping energy continuously, unlike 2-way control valves that provide flow through the heat exchanger equipment only when there is a call for cooling, and allow the system to reduce flow when it is not needed.

This ECM includes the installation of Variable Frequency Drives on the two (2) 30 horsepower existing chilled water pumps. The VFD control is based on a differential pressure sensor in the water loop to measure demand for water. This ECM also includes replacement of the existing 3-way valves with 2-way valves which enable the system to operate correctly.

Energy Savings Calculations:

$$\text{Pump Power HP} = \frac{\text{Flow}_{\text{GPM}} \times \text{Head}_{\text{ft-hd.}}}{3650 \times \eta_{\text{pump}} \times \eta_{\text{motor}}}$$

$$\text{Energy Consumption (kWh)} = \text{Motor HP} \times 0.746 \frac{\text{kW}}{\text{HP}} \times \text{Hours of operation (Hr)} \times \frac{1}{\eta_{\text{motor}}}$$

$$\text{Total Energy Consumption (kWh)} = \sum \text{Energy Consumption of Each Motor}$$

$$\text{Energy Cost (\$)} = \text{Total Consumption(kWh)} \times \text{Average Cost of Electric} \left(\frac{\$}{\text{kWh}} \right)$$

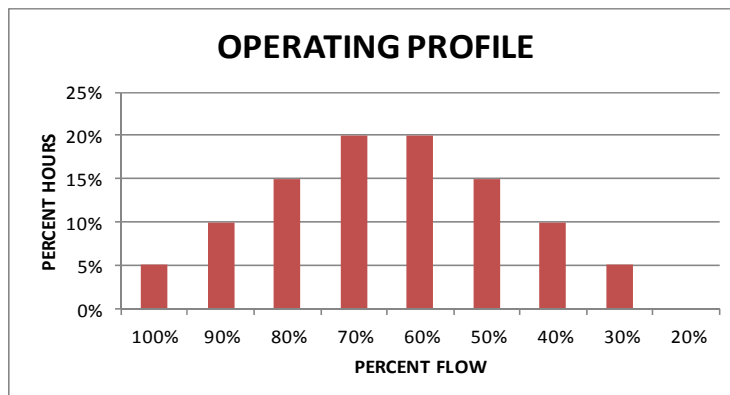
Affinity Laws are used in order to calculate energy savings by calculating the reduced power consumption requirement based a reduction in flow. Affinity laws, are as following:

Q = Flow, n = RPM, p = total pressure

$$\frac{Q_2}{Q_1} = \frac{n_2}{n_1} \quad \frac{p_2}{p_1} = \left(\frac{n_2}{n_1} \right)^2 \quad \frac{HP_2}{HP_1} = \left(\frac{n_2}{n_1} \right)^3$$

CHILLER PUMPS VFD CALCULATION			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	30.0	30.0	
Flow* (GPM)	830	830	-
Head* (Ft)	115	115	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	94.1%	94.1%	0.0%
Operating Hrs	1105	1105	-
Estimated Power (HP)	34.2	34.2	0.00
Elec Cost (\$/kWh)	0.139	0.139	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Electric Energy (kWh)	29,919	8,883	21,036
Electric Energy Cost (\$)	\$4,159	\$1,235	\$2,924
COMMENTS:			

Estimated Operating Profile with VFD



Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$269,663
NJ Smart Start Equipment Incentive (\$):	\$3,600
Net Installation Cost (\$):	\$266,063
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$2,924
Total Yearly Savings (\$/Yr):	\$2,924
Estimated ECM Lifetime (Yr):	20
Simple Payback	91.0
Simple Lifetime ROI	-78.0%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	\$58,480
Internal Rate of Return (IRR)	-11%
Net Present Value (NPV)	(\$222,561.26)

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 - Orchard Hill Elementary School

ECM ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
ECM NO.	DESCRIPTION	INSTALLATION COST				YEARLY SAVINGS			ECM LIFETIME (Yr)	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 Saving * ECM Lifetime)	(Lifetime Savings - Net Cost) / (Net Cost)	(Net cost / Yearly Savings)	$\sum_{n=0}^N \frac{C_n}{(1+IRR)^n}$	$\sum_{n=0}^N \frac{C_n}{(1+DR)^n}$
		(\$)	(\$)	(\$)	(\$)	(\$/Yr)	(\$/Yr)	(\$/Yr)		(\$)	(\$)	(%)	(Yr)	(\$)	(\$)
ECM #1	Lighting Upgrade	\$31,244	\$0	\$380	\$30,864	\$8,782	\$0	\$8,782	15	\$131,730	\$0	326.8%	3.5	27.73%	\$73,974.95
ECM #2	Gym Lighting Upgrade	\$8,360	\$0	\$1,900	\$6,460	\$1,829	\$0	\$1,829	15	\$27,433	\$0	324.7%	3.5	27.58%	\$15,372.69
ECM #3	Lighting Controls Upgrade	\$26,400	\$0	\$2,750	\$23,650	\$8,399	\$0	\$8,399	15	\$125,985	\$0	432.7%	2.8	35.13%	\$76,616.72
ECM #4	Boiler Replacement	\$58,455	\$30,559	\$4,375	\$84,639	\$3,008	\$0	\$3,008	24	\$72,192	\$0	-14.7%	28.1	-1.24%	(\$33,696.89)
ECM #5	VFD on Hot Water Pumps	\$95,551	\$216,357	\$208	\$311,700	\$8,381	\$0	\$8,381	20	\$167,620	\$0	-46.2%	37.2	-5.30%	(\$187,012.20)
ECM #6	VFD on Chilled Water Pumps	\$74,339	\$195,324	\$3,600	\$266,063	\$2,924	\$0	\$2,924	20	\$58,480	\$0	-78.0%	91.0	-11.47%	(\$222,561.26)

- 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 \geq 16
	\$600 per ton, EER \geq 18
	\$750 per ton, EER \geq 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 \geq 10 hp	\$60 per VFD rated hp

Natural Gas Water Heating

Gas Water Heaters \leq 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 \geq 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	\$50 per fixture
HID \geq 100w Replacement with new HID \geq 100w	\$70 per fixture

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



STATEMENT OF ENERGY PERFORMANCE

Orchard Hill Elementary School

Building ID: 1498494
For 12-month Period Ending: December 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: February 16, 2012

Facility
 Orchard Hill Elementary School
 244 Orchard Road
 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: 1966
Gross Floor Area (ft²): 130,000

Energy Performance Rating² (1-100) 50

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	4,147,513
Natural Gas (kBtu) ⁴	8,281,806
Total Energy (kBtu)	12,429,319

Energy Intensity⁴

Site (kBtu/ft ² /yr)	96
Source (kBtu/ft ² /yr)	173

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	1,028
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Electric Distribution Utility

Public Service Electric & Gas Co

National Median Comparison

National Median Site EUI	96
National Median Source EUI	174
% Difference from National Median Source EUI	-1%
Building Type	K-12 School

Meets Industry Standards⁵ for Indoor Environmental Conditions:

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

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.

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	<input checked="" type="checkbox"/>
Building Name	Orchard Hill Elementary School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		<input type="checkbox"/>
Type	K-12 School	Is this an accurate description of the space in question?		<input type="checkbox"/>
Location	244 Orchard Road, Skillman, NJ 08558	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		<input type="checkbox"/>
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.		<input type="checkbox"/>
Orchard Hill (K-12 School)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	<input checked="" type="checkbox"/>
Gross Floor Area	130,000 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.		<input type="checkbox"/>
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.		<input type="checkbox"/>
Number of PCs	253	Is this the number of personal computers in the K12 School?		<input type="checkbox"/>
Number of walk-in refrigeration/freezer units	2	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		<input type="checkbox"/>
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".		<input type="checkbox"/>
Percent Cooled	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		<input type="checkbox"/>
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		<input type="checkbox"/>
Months	12(Optional)	Is this school in operation for at least 8 months of the year?		<input type="checkbox"/>

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'.	<input type="checkbox"/>
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(OHES) Parking Lot (Parking)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	<input checked="" type="checkbox"/>
Gross Floor Area	128,391 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		<input type="checkbox"/>
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.		<input type="checkbox"/>
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).		<input type="checkbox"/>
Open Floor Area (w/o roof)	128,391 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.		<input type="checkbox"/>
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?		<input type="checkbox"/>

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-62-127-448-58 (kWh (thousand Watt-hours))		
Space(s): Orchard Hill		
Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
11/08/2011	12/07/2011	85,769.00
10/08/2011	11/07/2011	102,187.00
09/08/2011	10/07/2011	128,974.00
08/08/2011	09/07/2011	77,356.00
07/08/2011	08/07/2011	34,880.00
06/08/2011	07/07/2011	133,440.00
05/08/2011	06/07/2011	147,680.00
04/08/2011	05/07/2011	110,720.00
03/08/2011	04/07/2011	104,800.00
02/08/2011	03/07/2011	109,600.00
01/08/2011	02/07/2011	98,880.00
E-62-127-448-58 Consumption (kWh (thousand Watt-hours))		1,134,286.00
E-62-127-448-58 Consumption (kBtu (thousand Btu))		3,870,183.83
Meter: EL-62-971-517-09 (kWh (thousand Watt-hours))		
Space(s): Orchard Hill		
Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
11/03/2011	12/02/2011	188.00
10/03/2011	11/02/2011	172.00
09/03/2011	10/02/2011	148.00
08/03/2011	09/02/2011	126.00
07/03/2011	08/02/2011	126.00
06/03/2011	07/02/2011	110.00
05/03/2011	06/02/2011	122.00
04/03/2011	05/02/2011	145.00
03/03/2011	04/02/2011	150.00
02/03/2011	03/02/2011	171.00
01/03/2011	02/02/2011	180.00
EL-62-971-517-09 Consumption (kWh (thousand Watt-hours))		1,638.00
EL-62-971-517-09 Consumption (kBtu (thousand Btu))		5,588.86

Meter: EL-62-971-573-16 (kWh (thousand Watt-hours))**Space(s):** Orchard Hill**Generation Method:** Grid Purchase

Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
11/03/2011	12/02/2011	91.00
10/03/2011	11/02/2011	83.00
09/03/2011	10/02/2011	72.00
08/03/2011	09/02/2011	61.00
07/03/2011	08/02/2011	61.00
06/03/2011	07/02/2011	53.00
05/03/2011	06/02/2011	59.00
04/03/2011	05/02/2011	70.00
03/03/2011	04/02/2011	73.00
02/03/2011	03/02/2011	83.00
01/03/2011	02/02/2011	88.00
EL-62-971-573-16 Consumption (kWh (thousand Watt-hours))		794.00
EL-62-971-573-16 Consumption (kBtu (thousand Btu))		2,709.13
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		3,878,481.82
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		<input type="checkbox"/>

Fuel Type: Natural Gas**Meter: G-62-127-177-53 (therms)****Space(s):** Orchard Hill

Start Date	End Date	Energy Use (therms)
11/08/2011	12/07/2011	2,224.00
10/08/2011	11/07/2011	327.00
09/08/2011	10/07/2011	770.00
08/08/2011	09/07/2011	349.00
07/08/2011	08/07/2011	38.00
06/08/2011	07/07/2011	38.00
05/08/2011	06/07/2011	808.00
04/08/2011	05/07/2011	1,122.00
03/08/2011	04/07/2011	2,342.00
02/08/2011	03/07/2011	3,584.00
01/08/2011	02/07/2011	4,554.00
G-62-127-177-53 Consumption (therms)		16,156.00
G-62-127-177-53 Consumption (kBtu (thousand Btu))		1,615,600.00

Meter: G-65-127-449-55 (therms)**Space(s):** Orchard Hill

Start Date	End Date	Energy Use (therms)
11/08/2011	12/07/2011	4,816.00
10/08/2011	11/07/2011	434.00
09/08/2011	10/07/2011	214.00
08/08/2011	09/07/2011	286.00
07/08/2011	08/07/2011	46.00

06/08/2011	07/07/2011	45.00
05/08/2011	06/07/2011	68.00
04/08/2011	05/07/2011	2,115.00
03/08/2011	04/07/2011	4,206.00
02/08/2011	03/07/2011	6,074.00
01/08/2011	02/07/2011	7,023.00
G-65-127-449-55 Consumption (therms)		25,327.00
G-65-127-449-55 Consumption (kBtu (thousand Btu))		2,532,700.00
Meter: G-62-127-448-58 (therms) Space(s): Orchard Hill		
Start Date	End Date	Energy Use (therms)
11/08/2011	12/07/2011	4,291.00
10/08/2011	11/07/2011	331.00
09/08/2011	10/07/2011	302.00
08/08/2011	09/07/2011	170.00
07/08/2011	08/07/2011	29.00
06/08/2011	07/07/2011	29.00
05/08/2011	06/07/2011	46.00
04/08/2011	05/07/2011	1,734.00
03/08/2011	04/07/2011	3,911.00
02/08/2011	03/07/2011	5,700.00
01/08/2011	02/07/2011	6,578.00
G-62-127-448-58 Consumption (therms)		23,121.00
G-62-127-448-58 Consumption (kBtu (thousand Btu))		2,312,100.00
Total Natural Gas Consumption (kBtu (thousand Btu))		6,460,400.00
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		<input type="checkbox"/>

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.	<input type="checkbox"/>

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.	<input type="checkbox"/>

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
Orchard Hill Elementary School
244 Orchard Road
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

Orchard Hill Elementary School	
Gross Floor Area Excluding Parking: (ft ²)	130,000
Year Built	1966
For 12-month Evaluation Period Ending Date:	December 31, 2011

Facility Space Use Summary

Orchard Hill		(OHES) Parking Lot	
Space Type	K-12 School	Space Type	Parking
Gross Floor Area(ft ²)	130,000	Gross Floor Area(ft ²)	128,391
Open Weekends?	Yes	Enclosed Floor Area	0
Number of PCs	253	Non-Enclosed Floor Area (w/roof)	0
Number of walk-in refrigeration/freezer units	2	Open Floor Area (w/o roof)	128,391
Presence of cooking facilities	Yes	Weekly Hours of Access	168
Percent Cooled	100		
Percent Heated	100		
Months ^o	12		
High School?	No		
School District ^o	N/A		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 12/31/2011)	Baseline (Ending Date 09/30/2006)	Rating of 75	Target	National Median
Energy Performance Rating	50	15	75	N/A	50
Energy Intensity					
Site (kBtu/ft ²)	96	121	76	N/A	96
Source (kBtu/ft ²)	173	247	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 ₂ e/year	1,028	1,439	822	N/A	1,034
kgCO ₂ e/ft ² /year	8	11	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.

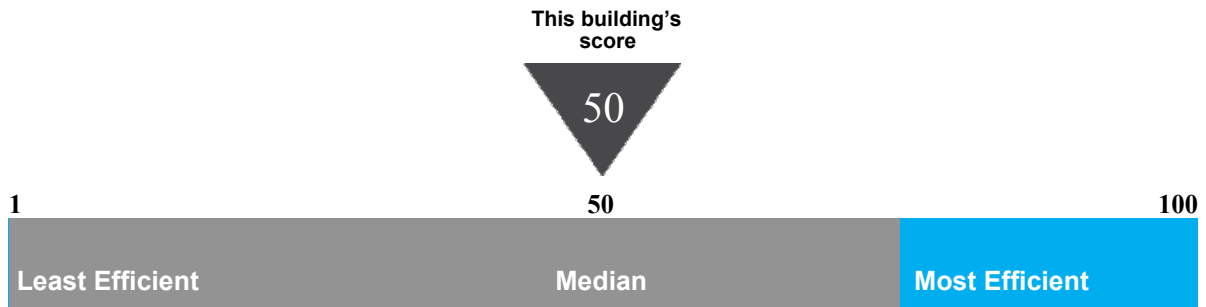
Statement of Energy Performance

2011

Orchard Hill Elementary School
244 Orchard Road
Skillman, NJ 08558

Portfolio Manager Building ID: 1498494

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 173 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



APPENDIX D

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Orchard Hill Elementary School

AHUs

Tag	AHU-A1	AHU-A2	AHU-C2
Unit Type	Air Handling Unit	Air Handling Unit	Air Handling Unit
Qty	1	1	1
Location	West Wing Rooftop	West Wing Rooftop	East Gymnasium
Area Served	Multi-Purpose Room 3	Multi-Purpose Room 3	East Gymnasium
Manufacturer	McQuay	McQuay	McQuay
Model #			FBOU110600919
Serial #	-	-	-
Cooling Type	Chilled Water	Chilled Water	Chilled Water
Cooling Capacity (Tons)	526 MBH	315 MBH	-
Cooling Efficiency (SEER/EER)	See Chiller	See Chiller	See Chiller
Heating Type	HW Heating	HW Heating	HW Heating
Heating Input (MBH)	639	319	-
Efficiency	See Boiler	See Boiler	See Boiler
Fuel	Hot Water	Hot Water	Hot Water
Approx Age	2	2	2
ASHRAE Service Life	15	15	15
Remaining Life	13	13	13
Comments			

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

Montgomery

AHUs

Tag	AHU-C3		
Unit Type	Air Handling Unit	Air Handling Unit	
Qty	1	2	
Location	East Gymnasium	Cafeteria	
Area Served	East Gymnasium	Cafeteria	
Manufacturer	McQuay	Trane	
Model #	FBOU110600919	-	
Serial #	-	-	
Cooling Type	Chilled Water	Chilled Water	
Cooling Capacity (Tons)	-	-	
Cooling Efficiency (SEER/EER)	See Chiller	See Chiller	
Heating Type	HW Heating	HW Heating	
Heating Input (MBH)	-	-	
Efficiency	See Boiler	See Boiler	
Fuel	Hot Water	Hot Water	
Approx Age	2	15	
ASHRAE Service Life	15	15	
Remaining Life	13	0	
Comments			

Note:

"N/A" = Not Applicable.

"- " = Info Not Available

Montgomery

AHUs

Tag			
Unit Type			
Qty			
Location			
Area Served			
Manufacturer			
Model #			
Serial #			
Cooling Type			
Cooling Capacity (Tons)			
Cooling Efficiency (SEER/EER)			
Heating Type			
Heating Input (MBH)			
Efficiency			
Fuel			
Approx Age			
ASHRAE Service Life	15	15	15
Remaining Life	15	15	15
Comments			

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

Montgomery

AHUs

Tag	
Unit Type	
Qty	
Location	
Area Served	
Manufacturer	
Model #	
Serial #	
Cooling Type	
Cooling Capacity (Tons)	
Cooling Efficiency (SEER/EER)	
Heating Type	
Heating Input (MBH)	
Efficiency	
Fuel	
Approx Age	
ASHRAE Service Life	15
Remaining Life	15
Comments	

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Orchard Hill Elementary School

Boilers

Tag	B-1,2	B-3,4	B-5,6
Unit Type	Condensing Boiler	Atmospheric	Condensing Boiler
Qty	2	2	2
Location	East Boiler Room	Central Boiler Room	West Boiler Room
Area Served	East Air Handlers/Unit Vents	Central Air Handlers/Unit Vents	West Air Handlers/Unit Vents
Manufacturer	Aerco	Weil McLain	Aerco
Model #	Benchmark 2.0	LGB-10	Benchmark 3.0
Serial #	-	Series 2	-
Input Capacity (Btu/Hr)	2,000 MBH	1,170 MBH	3,000 MBH
Rated Output Capacity (Btu/Hr)	1,706-1,860 MBH	947.7 MBH	2,883-2,610 MBH
Approx. Efficiency %	88.0%	80.0%	88.0%
Fuel	Nat Gas	Nat Gas	Nat Gas
Approx Age	5	15	5
ASHRAE Service Life	24	35	24
Remaining Life	19	20	19
Comments			

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Orchard Hill Elementary School

Chiller

Tag	CH-1,2,3,4		
Unit Type	Air Cooled Chiller		
Qty	4		
Location	Outside near Central Mechanical Room		
Area Served	Air Handlers/Unit Vents		
Manufacturer	McQuay		
Model #	AGZ110DHSNN-ER10		
Serial #	STNU110400257		
Refrigerant	R-410A		
Cooling Capacity (Tons)	110 Tons		
Cooling Efficiency (KW/Ton)	1.22 KW/Ton		
Volts / Phase / Hz	460/3/60		
Fuel	R-410A		
Chilled Water GPM / ΔT	169.4 GPM / 15°FΔT		
Condenser HP / Airflow	2 HP / 81,600 CFM		
Approx Age	2		
ASHRAE Service Life	20		
Remaining Life	18		
Comments	Scroll		

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Orchard Hill Elementary School

Domestic Water Heaters

Tag			
Unit Type	Domestic Hot Water	Domestic Hot Water	Domestic Hot Water
Qty	1	1	1
Location	East Boiler Room	West Boiler Room	Central Boiler Room
Area Served	East Building	West Building	Central Building
Manufacturer	AO Smith	AO Smith	Bock
Model #	BTH-199A 970	BTH 199 100	361PG ASME
Serial #	H06M010507	1107M002295	04063180P
Size (Gallons)	100 Gallons	1000 Gallons	113 Gallons
Input Capacity (MBH/KW)	199.9 MBH	199.9 MBH	385 MBH
Recovery (Gal/Hr)	227.76 GPH	230.18 GPH	415 GPH
Efficiency %	90%	95%	80.00%
Fuel	Nat Gas	Nat Gas	Nat Gas
Approx Age	5	1	5
ASHRAE Service Life	12	12	12
Remaining Life	7	11	7
Comments			

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Montgomery Township Schools - Orchard Hill Elementary School

Pumps

Tag	HWP-1,2	HWP-3,4	HWP-7,8
Unit Type	End Suction	End Suction	End Suction
Qty	2	2	2
Location	West Boiler Room	West Boiler Room	East Boiler Room
Area Served	West Unit Vents/Air Handlers	West Unit Vents/Air Handlers	East Unit Vents/ Air Handlers
Manufacturer	Taco	Taco	Taco
Model #	FI	FI	FI
Serial #	-	-	-
Horse Power	7.5 HP	15 HP	20 HP
Flow	300 GPM @ 62 FTHD	215 GPM @ 155 FTHD	252 GPM @ 164 FTHD
Motor Info	Baldor	Baldor	Baldor
Electrical Power	230/460/3/60	230/460/3/60	230/460/3/60
RPM	1750	1750	1765
Motor Efficiency %	91.0%	93.0%	93%
Approx Age	1	1	1
ASHRAE Service Life	20	20	20
Remaining Life	19	16	17
Comments			

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

Montgomery

Pumps

Tag	CHWP-1,2	HWP-5,6	
Unit Type	End Suction	End Suction	
Qty	2	2	
Location	Central Mech Room	Central Mech Room	
Area Served	Central Unit Vents/Air Handlers	Central Unit Vents/Air Handlers	
Manufacturer	Taco	Taco	
Model #	FI	FI	
Serial #	-	-	
Horse Power	30 HP	15 HP	
Flow	830 GPM @ 115 FTHD	215 GPM @ 155 FTHD	
Motor Info	Baldor	Baldor	
Electrical Power	230/460/3/60	230/460/3/60	
RPM	1770	1750	
Motor Efficiency %	94.1%	88.5%	
Approx Age	1	15	
ASHRAE Service Life	20	20	
Remaining Life	16	16	
Comments			

Note:

"N/A" = Not Applicable.

"-" = Info Not Available

APPENDIX E

Investment Grade Lighting Audit

CEG Job #: 9C11058

Project: Montgomery Twp. LG EA

Orchard Hill Elementary School

KWH COST: \$0.139

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
613	East Storage	1200	4	1	Industrial Fixture, 100w A19 Lamp	100	0.40	480.0	\$66.72	4	1	(1) 26w CFL Lamp	26	0.10	124.8	\$17.35	\$20.00	\$80.00	0.30	355.2	\$49.37	1.62
221.11	East Storage	1200	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	148.8	\$20.68	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	120	\$16.68	\$14.00	\$28.00	0.02	28.8	\$4.00	6.99
200	East Storage	1200	2	2	1x2, 2 Lamp, 17w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	34	0.07	81.6	\$11.34	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
649	Boiler Room	1200	6	2	1x1 Surface Mount, Prismatic Lens, (2) 13w PL Lamp	26	0.16	187.2	\$26.02	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor 164	3000	17	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.46	4,386.0	\$609.65	17	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.22	3672	\$510.41	\$21.00	\$357.00	0.24	714	\$99.25	3.60
221.14	Stage East	3000	8	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.46	1,392.0	\$193.49	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
111.11	Storage 84	1200	3	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	48	0.14	172.8	\$24.02	3	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.08	90	\$12.51	\$80.00	\$240.00	0.07	82.8	\$11.51	20.85
745	Gym East	3000	12	1	250w MH Down Light w/Prismatic Lens	295	3.54	10,620.0	\$1,476.18	12	6	2x4, 6 Lamp, 32w T8, Elect. Ballast, Lo Bay	168	2.02	6048	\$840.67	\$220.00	\$2,640.00	1.52	4572	\$635.51	4.15
128.34	Office 161	2600	16	2	8' Channel, 2 Lamp, 75w T12, Elect. Ballast, Pendant Mnt., No Lens	142	2.27	5,907.2	\$821.10	16	4	(2) 8' Lamps to (4) 4' Lamps - 32w T8, Elect Ballast; retrofit	104	1.66	4326.4	\$601.37	\$100.00	\$1,600.00	0.61	1580.8	\$219.73	7.28
242.21	Work Room 82	2600	6	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.64	1,669.2	\$232.02	6	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.59	1528.8	\$212.50	\$28.00	\$168.00	0.05	140.4	\$19.52	8.61
3520	Work Room 82 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00
3520	Toilet 99F	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00
745	MPR	2600	11	1	250w MH Down Light w/Prismatic Lens	295	3.25	8,437.0	\$1,172.74	11	6	2x4, 6 Lamp, 32w T8, Elect. Ballast, Lo Bay	168	1.85	4804.8	\$667.87	\$220.00	\$2,420.00	1.40	3632.2	\$504.88	4.79
242.21	Gym Office	2600	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	556.4	\$77.34	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	509.6	\$70.83	\$28.00	\$56.00	0.02	46.8	\$6.51	8.61
242.21	Gym Office Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61
231.11	Electrical Room 94	1200	1	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.10	115.2	\$16.01	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.11	MPR Storage #1	1200	4	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.38	460.8	\$64.05	4	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
231.11	MPR Storage #2	1200	5	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.48	576.0	\$80.06	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
3520	MPR Storage #2 Closet	1200	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	62.4	\$8.67	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00
232.21	Corridor Gym - 151	3000	16	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.38	4,128.0	\$573.79	16	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.15	3456	\$480.38	\$21.00	\$336.00	0.22	672	\$93.41	3.60
242.21	Office 75	2600	8	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.86	2,225.6	\$309.36	8	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.78	2038.4	\$283.34	\$28.00	\$224.00	0.07	187.2	\$26.02	8.61
242.21	Office 75 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61
3520	73	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00
31	74 Storage	1200	2	2	Surface Light, (1) 26w PL Lamp	26	0.05	62.4	\$8.67	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
31	74 Chase	1200	2	2	Surface Light, (1) 26w PL Lamp	26	0.05	62.4	\$8.67	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 151	2600	15	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.93	2,418.0	\$336.10	15	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.75	1950	\$271.05	\$14.00	\$210.00	0.18	468	\$65.05	3.23
649	99H	2600	1	2	1x1 Surface Mount, Prismatic Lens, (2) 13w PL Lamp	26	0.03	67.6	\$9.40	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	50	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	5.35	13,910.0	\$1,933.49	50	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	4.90	12740	\$1,770.86	\$28.00	\$1,400.00	0.45	1170	\$162.63	8.61
242.21	Café	2600	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	3,894.8	\$541.38	14	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.37	3567.2	\$495.84	\$28.00	\$392.00	0.13	327.6	\$45.54	8.61
551	Café	2600	75	1	Recessed Down Light, 100w A Lamp	100	7.50	19,500.0	\$2,710.50	75	1	26w CFL Lamp	26	1.95	5070	\$704.73	\$20.00	\$1,500.00	5.55	14430	\$2,005.77	0.75
242.21	Kitchen	2600	23	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	2.46	6,398.6	\$889.41	23	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	2.25	5860.4	\$814.60	\$28.00	\$644.00	0.21	538.2	\$74.81	8.61
128.34	Café Closet	1200	3	2	8' Channel, 2 Lamp, 75w T12, Elect. Ballast, Pendant Mnt., No Lens	142	0.43	511.2	\$71.06	3	4	(2) 8' Lamps to (4) 4' Lamps - 32w T8, Elect Ballast; retrofit	104	0.31	374.4	\$52.04	\$100.00	\$300.00	0.11	136.8	\$19.02	15.78
231.33	Stage	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	86	1.72	4,472.0	\$621.61	20	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Stage	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$31.08	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	187.2	\$26.02	\$21.00	\$21.00	0.01	36.4	\$5.06	4.15
232.21	Kitchen Locker	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15
227.211	Kitchen JC	1200	1	2	2x2, 2 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	34	0.03	40.8	\$5.67	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

Investment Grade Lighting Audit

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	Kitchen Lounge	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15	
232.21	Kitchen Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15	
242.21	Classroom 102	2600	13	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.39	3,616.6	\$502.71	13	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.27	3312.4	\$460.42	\$28.00	\$364.00	0.12	304.2	\$42.28	8.61	
242.21	Classroom 102 Closet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61	
242.21	Classroom 102 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61	
232.21	Classroom 102 Kitchen	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$31.08	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	187.2	\$26.02	\$21.00	\$21.00	0.01	36.4	\$5.06	4.15	
242.21	Classroom 101	2600	13	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.39	3,616.6	\$502.71	13	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.27	3312.4	\$460.42	\$28.00	\$364.00	0.12	304.2	\$42.28	8.61	
242.21	Classroom 101 Closet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61	
242.21	Classroom 101 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61	
232.21	Classroom 101 Kitchen	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$31.08	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	187.2	\$26.02	\$21.00	\$21.00	0.01	36.4	\$5.06	4.15	
221.11	Classroom 104	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
3520	Classroom 104 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00	
221.11	Classroom 106	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
3520	Classroom 106 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00	
221.11	Classroom 108	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
3520	Classroom 108 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	1	(1) 26w CFL Lamp	0	0.00	0	\$0.00	\$20.00	\$20.00	0.00	0	\$0.00	0.00	
221.11	Classroom 103	2600	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3,385.2	\$470.54	21	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.05	2730	\$379.47	\$14.00	\$294.00	0.25	655.2	\$91.07	3.23	
222.11	Classroom 103 Toilet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	
222.11	Classroom 103 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	

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	
221.11	Classroom 105	2600	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3,385.2	\$470.54	21	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.05	2730	\$379.47	\$14.00	\$294.00	0.25	655.2	\$91.07	3.23	
222.11	Classroom 105 Toilet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	
222.11	Classroom 105 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	
221.11	Classroom 107	2600	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3,385.2	\$470.54	21	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.05	2730	\$379.47	\$14.00	\$294.00	0.25	655.2	\$91.07	3.23	
222.11	Classroom 107 Toilet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	
222.11	Classroom 107 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	
232.21	Corridor 101-Toilet	2600	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	\$590.53	19	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.37	3556.8	\$494.40	\$21.00	\$399.00	0.27	691.6	\$96.13	4.15	
31	West Lobby	3000	9	2	Surface Light, (1) 26w PL Lamp	26	0.23	702.0	\$97.58	9	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
31	West Corridor	3000	10	2	Surface Light, (1) 26w PL Lamp	26	0.26	780.0	\$108.42	10	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
30	West Corridor	3000	19	2	Recessed Down Light, (2) 26w PL Lamp	54	1.03	3,078.0	\$427.84	19	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
613	Kitchen Refrigerators	1200	2	1	Industrial Fixture, 100w A19 Lamp	100	0.20	240.0	\$33.36	2	1	(1) 26w CFL Lamp	26	0.05	62.4	\$8.67	\$20.00	\$40.00	0.15	177.6	\$24.69	1.62	
222.21	Storage 32	1200	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	\$20.68	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	120	\$16.68	\$14.00	\$28.00	0.02	28.8	\$4.00	6.99	
232.21	Teachers Lounge	2600	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.86	2,236.0	\$310.80	10	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.72	1872	\$260.21	\$21.00	\$210.00	0.14	364	\$50.60	4.15	
221.34	Mech Room 31	1200	7	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.41	487.2	\$67.72	7	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
31	Janitors Closet 16	1200	3	2	Surface Light, (1) 26w PL Lamp	26	0.08	93.6	\$13.01	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.14	Storage 12	1200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.12	139.2	\$19.35	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.14	Storage 6	1200	13	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.75	904.8	\$125.77	13	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
745	West Gym	2600	9	1	250w MH Down Light w/Prismatic Lens	295	2.66	6,903.0	\$959.52	9	6	2x4, 6 Lamp, 32w T8, Elect. Ballast, Lo Bay	168	1.51	3931.2	\$546.44	\$220.00	\$1,980.00	1.14	2971.8	\$413.08	4.79	
242.21	West Gym Office	2600	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	556.4	\$77.34	2	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.20	509.6	\$70.83	\$28.00	\$56.00	0.02	46.8	\$6.51	8.61	

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
231.11	West Gym Storage	1200	8	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.77	921.6	\$128.10	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
745	West Gym	2600	6	1	250w MH Down Light w/Prismatic Lens	295	1.77	4,602.0	\$639.68	6	6	2x4, 6 Lamp, 32w T8, Elect. Ballast, Lo Bay	168	1.01	2620.8	\$364.29	\$220.00	\$1,320.00	0.76	1981.2	\$275.39	4.79
31	West Boiler Room 2	1200	10	2	Surface Light, (1) 26w PL Lamp	26	0.26	312.0	\$43.37	10	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
613	West Boiler Room 2	1200	1	1	Industrial Fixture, 100w A19 Lamp	100	0.10	120.0	\$16.68	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.34	\$20.00	\$20.00	0.07	88.8	\$12.34	1.62
221.34	West Boiler Room 2	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	69.6	\$9.67	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.11	Janitors Closet 1	1200	2	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.19	230.4	\$32.03	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.11	Tractor Room	1200	2	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.19	230.4	\$32.03	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Guidance	2600	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1,112.8	\$154.68	4	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.39	1019.2	\$141.67	\$28.00	\$112.00	0.04	93.6	\$13.01	8.61
242.21	Break Room	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61
242.21	Classroom 7	2600	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1,112.8	\$154.68	4	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.39	1019.2	\$141.67	\$28.00	\$112.00	0.04	93.6	\$13.01	8.61
242.21	Staff Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61
222.21	Office 9	2600	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	644.8	\$89.63	4	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.20	520	\$72.28	\$14.00	\$56.00	0.05	124.8	\$17.35	3.23
613	Janitors Closet 10	1200	1	1	Industrial Fixture, 100w A19 Lamp	100	0.10	120.0	\$16.68	1	1	(1) 26w CFL Lamp	26	0.03	31.2	\$4.34	\$20.00	\$20.00	0.07	88.8	\$12.34	1.62
222.21	Boy's Room	2600	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	483.6	\$67.22	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	390	\$54.21	\$14.00	\$42.00	0.04	93.6	\$13.01	3.23
222.21	Girl's Room	2600	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	483.6	\$67.22	3	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.15	390	\$54.21	\$14.00	\$42.00	0.04	93.6	\$13.01	3.23
242.21	Classroom 109	2600	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	3,894.8	\$541.38	14	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.37	3567.2	\$495.84	\$28.00	\$392.00	0.13	327.6	\$45.54	8.61
31	Classroom 109 Toilet #1	2600	1	2	Surface Light, (1) 26w PL Lamp	26	0.03	67.6	\$9.40	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
6917	Classroom 109 Toilet #2	2600	1	1	1x1 Surface Light, (1) 100w A Lamp	100	0.10	260.0	\$36.14	1	1	26w CFL Lamp	26	0.03	67.6	\$9.40	\$20.00	\$20.00	0.07	192.4	\$26.74	0.75
6917	Classroom 109 Rest Room	2600	1	1	1x1 Surface Light, (1) 100w A Lamp	100	0.10	260.0	\$36.14	1	1	26w CFL Lamp	26	0.03	67.6	\$9.40	\$20.00	\$20.00	0.07	192.4	\$26.74	0.75

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	Classroom 109 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	161.2	\$22.41	1	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.05	130	\$18.07	\$14.00	\$14.00	0.01	31.2	\$4.34	3.23	
221.11	Classroom 111	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 112	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 110	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 113	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 114	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 115	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 116	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 117	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 118	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 119	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 120	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 121	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 122	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
232.21	Corridor 122 - Toilet	2600	23	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.98	5,142.8	\$714.85	23	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.66	4305.6	\$598.48	\$21.00	\$483.00	0.32	837.2	\$116.37	4.15	
242.21	Storage Book Room	1200	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	385.2	\$53.54	3	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.29	352.8	\$49.04	\$28.00	\$84.00	0.03	32.4	\$4.50	18.65	
242.21	Falculty Work Room	2600	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	3,894.8	\$541.38	14	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.37	3567.2	\$495.84	\$28.00	\$392.00	0.13	327.6	\$45.54	8.61	
242.21	123	2600	16	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.71	4,451.2	\$618.72	16	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.57	4076.8	\$566.68	\$28.00	\$448.00	0.14	374.4	\$52.04	8.61	
221.14	123 Sprinkler Room	1200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.12	139.2	\$19.35	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	
221.14	124	2600	34	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	1.97	5,127.2	\$712.68	34	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	124 Closet	1200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	103.2	\$14.34	1	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.07	86.4	\$12.01	\$21.00	\$21.00	0.01	16.8	\$2.34	8.99	
242.21	Classroom 135	2600	18	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.93	5,007.6	\$696.06	18	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.76	4586.4	\$637.51	\$28.00	\$504.00	0.16	421.2	\$58.55	8.61	
242.21	Classroom 136	2600	18	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.93	5,007.6	\$696.06	18	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	1.76	4586.4	\$637.51	\$28.00	\$504.00	0.16	421.2	\$58.55	8.61	
221.11	Classroom 134	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 133	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 132	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 131	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 130	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 129	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
211.37	Boy's Room	2600	8	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic	30	0.24	624.0	\$86.74	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.11	Classroom 128	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
211.37	Girl's Room	2600	8	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic	30	0.24	624.0	\$86.74	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.11	Classroom 126	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 127	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
232.21	Exit	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	774.0	\$107.59	3	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.22	648	\$90.07	\$21.00	\$63.00	0.04	126	\$17.51	3.60	
221.31	Small Group 15	2600	16	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.99	2,579.2	\$358.51	16	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.80	2080	\$289.12	\$14.00	\$224.00	0.19	499.2	\$69.39	3.23	
128.34	Classroom 125	2600	16	2	8' Channel, 2 Lamp, 75w T12, Elect. Ballast, Pendant Mnt., No Lens	142	2.27	5,907.2	\$821.10	16	4	(2) 8' Lamps to (4) 4' Lamps - 32w T8, Elect Ballast; retrofit	104	1.66	4326.4	\$601.37	\$100.00	\$1,600.00	0.61	1580.8	\$219.73	7.28	
221.11	Men's Room	2600	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	322.4	\$44.81	2	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.10	260	\$36.14	\$14.00	\$28.00	0.02	62.4	\$8.67	3.23	

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	Corridor 12 - 135	2600	30	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.58	6,708.0	\$932.41	30	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	2.16	5616	\$780.62	\$21.00	\$630.00	0.42	1092	\$151.79	4.15	
242.21	Classroom 138	2600	21	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	2.25	5,842.2	\$812.07	21	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	2.06	5350.8	\$743.76	\$28.00	\$588.00	0.19	491.4	\$68.30	8.61	
242.21	Classroom 138 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61	
242.21	Classroom 139	2600	21	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	2.25	5,842.2	\$812.07	21	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	2.06	5350.8	\$743.76	\$28.00	\$588.00	0.19	491.4	\$68.30	8.61	
242.21	Classroom 139 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.10	254.8	\$35.42	\$28.00	\$28.00	0.01	23.4	\$3.25	8.61	
221.11	Classroom 140	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 141	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 142	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 143	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 144	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 145	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 146	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2,901.6	\$403.32	18	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.90	2340	\$325.26	\$14.00	\$252.00	0.22	561.6	\$78.06	3.23	
221.11	Classroom 147	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 148	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2,901.6	\$403.32	18	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.90	2340	\$325.26	\$14.00	\$252.00	0.22	561.6	\$78.06	3.23	
221.11	Classroom 149	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 150	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3,868.8	\$537.76	24	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	1.20	3120	\$433.68	\$14.00	\$336.00	0.29	748.8	\$104.08	3.23	
221.11	Classroom 152	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 153	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 154	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	

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	
221.11	Classroom 155	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 156	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 157	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 158	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 159	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
221.11	Classroom 160	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2,901.6	\$403.32	18	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.90	2340	\$325.26	\$14.00	\$252.00	0.22	561.6	\$78.06	3.23	
232.21	Corridor 138 - 150	3000	30	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.58	7,740.0	\$1,075.86	30	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	2.16	6480	\$900.72	\$21.00	\$630.00	0.42	1260	\$175.14	3.60	
232.21	Main Corridor	3000	24	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.06	6,192.0	\$860.69	24	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	1.73	5184	\$720.58	\$21.00	\$504.00	0.34	1008	\$140.11	3.60	
232.21	Main Office	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	\$372.96	12	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.86	2246.4	\$312.25	\$21.00	\$252.00	0.17	436.8	\$60.72	4.15	
232.21	Office #1	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15	
232.21	Office #2	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15	
232.21	Office #3	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15	
232.21	Office #4	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	3	Relamp - Sylvania Lamp FO28/841/SS/ECO	72	0.14	374.4	\$52.04	\$21.00	\$42.00	0.03	72.8	\$10.12	4.15	
221.11	Classroom 77/78	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1,934.4	\$268.88	12	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.60	1560	\$216.84	\$14.00	\$168.00	0.14	374.4	\$52.04	3.23	
242.21	76	2600	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1,112.8	\$154.68	4	4	Relamp - Sylvania Lamp FO28/841/SS/ECO	98	0.39	1019.2	\$141.67	\$28.00	\$112.00	0.04	93.6	\$13.01	8.61	
221.11	Classroom 162	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2,901.6	\$403.32	18	2	Relamp - Sylvania Lamp FO28/841/SS/ECO	50	0.90	2340	\$325.26	\$14.00	\$252.00	0.22	561.6	\$78.06	3.23	
111.11	Office 85	2600	3	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	48	0.14	374.4	\$52.04	3	1	Reballast & Relamp; Sylvania Lamp FO28/841/SS/ECO	25	0.08	195	\$27.11	\$80.00	\$240.00	0.07	179.4	\$24.94	9.62	
Totals			1,799	400				366,291	\$50,915	1,799	365			102.0	267,030	\$37,117		\$39,604	29.4	76,339	\$10,611	3.73	

CEG Job #: 9C11058
 Project: Montgomery Twp. LGEA
 Address: 0
 0
 Building SF: .

Orchard Hill Elementary School

KWH COST: \$0.139

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
613	East Storage	1200	4	1	Industrial Fixture, 100w A19 Lamp	100	0.40	480	\$66.72	4	0	No Change	100	0.40	0%	480	\$66.72	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	East Storage	1200	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	148.8	\$20.68	2	0	No Change	62	0.12	0%	148.8	\$20.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
200	East Storage	1200	2	2	1x2, 2 Lamp, 17w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	34	0.07	81.6	\$11.34	2	0	No Change	34	0.07	0%	81.6	\$11.34	\$0.00	\$0.00	0.00	0	\$0.00	0.00
649	Boiler Room	1200	6	2	1x1 Surface Mount, Prismatic Lens, (2) 13w PL Lamp	26	0.16	187.2	\$26.02	6	0	No Change	26	0.16	0%	187.2	\$26.02	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor 164	3000	17	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.46	4386	\$609.65	17	0	No Change	86	1.46	0%	4386	\$609.65	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	Stage East	3000	8	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.46	1392	\$193.49	8	0	No Change	58	0.46	0%	1392	\$193.49	\$0.00	\$0.00	0.00	0	\$0.00	0.00
111.11	Storage 84	1200	3	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	48	0.14	172.8	\$24.02	3	0	No Change	48	0.14	0%	172.8	\$24.02	\$0.00	\$0.00	0.00	0	\$0.00	0.00
745	Gym East	3000	12	1	250w MH Down Light w/Prismatic Lens	295	3.54	10620	\$1,476.18	12	2	Dual Technology Occupancy Sensor - Remote Mnt.	295	2.83	20%	8496	\$1,180.94	\$300.00	\$600.00	0.71	2124	\$295.24	2.03
128.34	Office 161	2600	16	2	8' Channel, 2 Lamp, 75w T12, Elect. Ballast, Pendant Mnt., No Lens	142	2.27	5907.2	\$821.10	16	1	Dual Technology Occupancy Sensor - Switch Mnt.	142	1.82	20%	4725.76	\$656.88	\$150.00	\$150.00	0.45	1181.44	\$164.22	0.91
242.21	Work Room 82	2600	6	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.64	1669.2	\$232.02	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.51	20%	1335.36	\$185.62	\$150.00	\$150.00	0.13	333.84	\$46.40	3.23
3520	Work Room 82 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	0	No Change	52	0.05	0%	135.2	\$18.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
3520	Toilet 99F	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	0	No Change	52	0.05	0%	135.2	\$18.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
745	MPR	2600	11	1	250w MH Down Light w/Prismatic Lens	295	3.25	8437	\$1,172.74	11	2	Dual Technology Occupancy Sensor - Remote Mnt.	295	2.60	20%	6749.6	\$938.19	\$300.00	\$600.00	0.65	1687.4	\$234.55	2.56
242.21	Gym Office	2600	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	556.4	\$77.34	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.17	20%	445.12	\$61.87	\$150.00	\$150.00	0.04	111.28	\$15.47	9.70
242.21	Gym Office Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$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
231.11	Electrical Room 94	1200	1	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.10	115.2	\$16.01	1	0	No Change	96	0.10	0%	115.2	\$16.01	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.11	MPR Storage #1	1200	4	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.38	460.8	\$64.05	4	0	No Change	96	0.38	0%	460.8	\$64.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.11	MPR Storage #2	1200	5	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.48	576	\$80.06	5	0	No Change	96	0.48	0%	576	\$80.06	\$0.00	\$0.00	0.00	0	\$0.00	0.00
3520	MPR Storage #2 Closet	1200	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	62.4	\$8.67	1	0	No Change	52	0.05	0%	62.4	\$8.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor Gym - 151	3000	16	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.38	4128	\$573.79	16	0	No Change	86	1.38	0%	4128	\$573.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Office 75	2600	8	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.86	2225.6	\$309.36	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.68	20%	1780.48	\$247.49	\$150.00	\$150.00	0.17	445.12	\$61.87	2.42
242.21	Office 75 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
3520	73	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	0	No Change	52	0.05	0%	135.2	\$18.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
31	74 Storage	1200	2	2	Surface Light, (1) 26w PL Lamp	26	0.05	62.4	\$8.67	2	0	No Change	26	0.05	0%	62.4	\$8.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
31	74 Chase	1200	2	2	Surface Light, (1) 26w PL Lamp	26	0.05	62.4	\$8.67	2	0	No Change	26	0.05	0%	62.4	\$8.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 151	2600	15	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.93	2418	\$336.10	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.74	20%	1934.4	\$268.88	\$300.00	\$300.00	0.19	483.6	\$67.22	4.46
649	99H	2600	1	2	1x1 Surface Mount, Prismatic Lens, (2) 13w PL Lamp	26	0.03	67.6	\$9.40	1	0	No Change	26	0.03	0%	67.6	\$9.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Café	2600	50	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	5.35	13910	\$1,933.49	50	2	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	107	4.28	20%	11128	\$1,546.79	\$450.00	\$900.00	1.07	2782	\$386.70	2.33
242.21	Café	2600	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	3894.8	\$541.38	14	1	Daylight Sensor (Sensorswitch PP-20 & CM-PC or equal)	107	0.90	40%	2336.88	\$324.83	\$300.00	\$300.00	0.60	1557.92	\$216.55	1.39
551	Café	2600	75	1	Recessed Down Light, 100w A Lamp	100	7.50	19500	\$2,710.50	75	2	Dual Tech. Occupancy Sensor w/2 Pole Powerpack Remote Mnt.	100	6.00	20%	15600	\$2,168.40	\$450.00	\$900.00	1.50	3900	\$542.10	1.66
242.21	Kitchen	2600	23	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	2.46	6398.6	\$889.41	23	2	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.97	20%	5118.88	\$711.52	\$300.00	\$600.00	0.49	1279.72	\$177.88	3.37

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
128.34	Café Closet	1200	3	2	8' Channel, 2 Lamp, 75w T12, Elect. Ballast, Pendant Mnt., No Lens	142	0.43	511.2	\$71.06	3	0	No Change	142	0.43	0%	511.2	\$71.06	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.33	Stage	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	86	1.72	4472	\$621.61	20	0	No Change	86	1.72	0%	4472	\$621.61	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Stage	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$31.08	1	0	No Change	86	0.09	0%	223.6	\$31.08	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Kitchen Locker	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	0	No Change	86	0.17	0%	447.2	\$62.16	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.211	Kitchen JC	1200	1	2	2x2, 2 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	34	0.03	40.8	\$5.67	1	0	No Change	34	0.03	0%	40.8	\$5.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Kitchen Lounge	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	357.76	\$49.73	\$150.00	\$150.00	0.03	89.44	\$12.43	12.07
232.21	Kitchen Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	357.76	\$49.73	\$150.00	\$150.00	0.03	89.44	\$12.43	12.07
242.21	Classroom 102	2600	13	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.39	3616.6	\$502.71	13	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.11	20%	2893.28	\$402.17	\$300.00	\$300.00	0.28	723.32	\$100.54	2.98
242.21	Classroom 102 Closet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 102 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Classroom 102 Kitchen	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$31.08	1	0	No Change	86	0.09	0%	223.6	\$31.08	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 101	2600	13	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.39	3616.6	\$502.71	13	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.11	20%	2893.28	\$402.17	\$300.00	\$300.00	0.28	723.32	\$100.54	2.98
242.21	Classroom 101 Closet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 101 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Classroom 101 Kitchen	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$31.08	1	0	No Change	86	0.09	0%	223.6	\$31.08	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 104	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79

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
3520	Classroom 104 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	0	No Change	52	0.05	0%	135.2	\$18.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 106	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
3520	Classroom 106 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	0	No Change	52	0.05	0%	135.2	\$18.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 108	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
3520	Classroom 108 Toilet	2600	1	1	Ceiling Mount White Globe, (1) 60w Lamp	52	0.05	135.2	\$18.79	1	0	No Change	52	0.05	0%	135.2	\$18.79	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 103	2600	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3385.2	\$470.54	21	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.04	20%	2708.16	\$376.43	\$300.00	\$300.00	0.26	677.04	\$94.11	3.19
222.11	Classroom 103 Toilet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	Classroom 103 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 105	2600	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3385.2	\$470.54	21	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.04	20%	2708.16	\$376.43	\$300.00	\$300.00	0.26	677.04	\$94.11	3.19
222.11	Classroom 105 Toilet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	Classroom 105 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 107	2600	21	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.30	3385.2	\$470.54	21	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.04	20%	2708.16	\$376.43	\$300.00	\$300.00	0.26	677.04	\$94.11	3.19
222.11	Classroom 107 Toilet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.11	Classroom 107 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Direct/ Indirect	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor 101-Toilet	2600	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4248.4	\$590.53	19	0	No Change	86	1.63	0%	4248.4	\$590.53	\$0.00	\$0.00	0.00	0	\$0.00	0.00
31	West Lobby	3000	9	2	Surface Light, (1) 26w PL Lamp	26	0.23	702	\$97.58	9	0	No Change	26	0.23	0%	702	\$97.58	\$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
31	West Corridor	3000	10	2	Surface Light, (1) 26w PL Lamp	26	0.26	780	\$108.42	10	0	No Change	26	0.26	0%	780	\$108.42	\$0.00	\$0.00	0.00	0	\$0.00	0.00
30	West Corridor	3000	19	2	Recessed Down Light, (2) 26w PL Lamp	54	1.03	3078	\$427.84	19	0	No Change	54	1.03	0%	3078	\$427.84	\$0.00	\$0.00	0.00	0	\$0.00	0.00
613	Kitchen Refrigerators	1200	2	1	Industrial Fixture, 100w A19 Lamp	100	0.20	240	\$33.36	2	0	No Change	100	0.20	0%	240	\$33.36	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Storage 32	1200	2	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.12	148.8	\$20.68	2	0	No Change	62	0.12	0%	148.8	\$20.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Teachers Lounge	2600	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.86	2236	\$310.80	10	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.69	20%	1788.8	\$248.64	\$150.00	\$150.00	0.17	447.2	\$62.16	2.41
221.34	Mech Room 31	1200	7	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.41	487.2	\$67.72	7	0	No Change	58	0.41	0%	487.2	\$67.72	\$0.00	\$0.00	0.00	0	\$0.00	0.00
31	Janitors Closet 16	1200	3	2	Surface Light, (1) 26w PL Lamp	26	0.08	93.6	\$13.01	3	0	No Change	26	0.08	0%	93.6	\$13.01	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	Storage 12	1200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.12	139.2	\$19.35	2	0	No Change	58	0.12	0%	139.2	\$19.35	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	Storage 6	1200	13	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.75	904.8	\$125.77	13	0	No Change	58	0.75	0%	904.8	\$125.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
745	West Gym	2600	9	1	250w MH Down Light w/Prismatic Lens	295	2.66	6903	\$959.52	9	1	Dual Technology Occupancy Sensor - Remote Mnt.	295	2.12	20%	5522.4	\$767.61	\$300.00	\$300.00	0.53	1380.6	\$191.90	1.56
242.21	West Gym Office	2600	2	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.21	556.4	\$77.34	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.17	20%	445.12	\$61.87	\$150.00	\$150.00	0.04	111.28	\$15.47	9.70
231.11	West Gym Storage	1200	8	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.77	921.6	\$128.10	8	0	No Change	96	0.77	0%	921.6	\$128.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
745	West Gym	2600	6	1	250w MH Down Light w/Prismatic Lens	295	1.77	4602	\$639.68	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	295	1.42	20%	3681.6	\$511.74	\$300.00	\$300.00	0.35	920.4	\$127.94	2.34
31	West Boiler Room 2	1200	10	2	Surface Light, (1) 26w PL Lamp	26	0.26	312	\$43.37	10	0	No Change	26	0.26	0%	312	\$43.37	\$0.00	\$0.00	0.00	0	\$0.00	0.00
613	West Boiler Room 2	1200	1	1	Industrial Fixture, 100w A19 Lamp	100	0.10	120	\$16.68	1	0	No Change	100	0.10	0%	120	\$16.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	West Boiler Room 2	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	69.6	\$9.67	1	0	No Change	58	0.06	0%	69.6	\$9.67	\$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
231.11	Janitors Closet 1	1200	2	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.19	230.4	\$32.03	2	0	No Change	96	0.19	0%	230.4	\$32.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.11	Tractor Room	1200	2	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	96	0.19	230.4	\$32.03	2	0	No Change	96	0.19	0%	230.4	\$32.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Guidance	2600	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1112.8	\$154.68	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.34	20%	890.24	\$123.74	\$150.00	\$150.00	0.09	222.56	\$30.94	4.85
242.21	Break Room	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 7	2600	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1112.8	\$154.68	4	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	0.34	20%	890.24	\$123.74	\$300.00	\$300.00	0.09	222.56	\$30.94	9.70
242.21	Staff Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Office 9	2600	4	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.25	644.8	\$89.63	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.20	20%	515.84	\$71.70	\$150.00	\$150.00	0.05	128.96	\$17.93	8.37
613	Janitors Closet 10	1200	1	1	Industrial Fixture, 100w A19 Lamp	100	0.10	120	\$16.68	1	0	No Change	100	0.10	0%	120	\$16.68	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Boy's Room	2600	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	483.6	\$67.22	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	386.88	\$53.78	\$150.00	\$150.00	0.04	96.72	\$13.44	11.16
222.21	Girl's Room	2600	3	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.19	483.6	\$67.22	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.15	20%	386.88	\$53.78	\$150.00	\$150.00	0.04	96.72	\$13.44	11.16
242.21	Classroom 109	2600	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	3894.8	\$541.38	14	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.20	20%	3115.84	\$433.10	\$300.00	\$300.00	0.30	778.96	\$108.28	2.77
31	Classroom 109 Toilet #1	2600	1	2	Surface Light, (1) 26w PL Lamp	26	0.03	67.6	\$9.40	1	0	No Change	26	0.03	0%	67.6	\$9.40	\$0.00	\$0.00	0.00	0	\$0.00	0.00
6917	Classroom 109 Toilet #2	2600	1	1	1x1 Surface Light, (1) 100w A Lamp	100	0.10	260	\$36.14	1	0	No Change	100	0.10	0%	260	\$36.14	\$0.00	\$0.00	0.00	0	\$0.00	0.00
6917	Classroom 109 Rest Room	2600	1	1	1x1 Surface Light, (1) 100w A Lamp	100	0.10	260	\$36.14	1	0	No Change	100	0.10	0%	260	\$36.14	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	Classroom 109 Closet	2600	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	161.2	\$22.41	1	0	No Change	62	0.06	0%	161.2	\$22.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 111	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58

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
221.11	Classroom 112	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 110	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 113	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 114	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 115	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 116	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 117	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 118	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 119	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 120	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 121	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 122	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
232.21	Corridor 122 - Toilet	2600	23	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.98	5142.8	\$714.85	23	0	No Change	86	1.98	0%	5142.8	\$714.85	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Storage Book Room	1200	3	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.32	385.2	\$53.54	3	0	No Change	107	0.32	0%	385.2	\$53.54	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Faculty Work Room	2600	14	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.50	3894.8	\$541.38	14	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	1.20	20%	3115.84	\$433.10	\$150.00	\$150.00	0.30	778.96	\$108.28	1.39
242.21	123	2600	16	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.71	4451.2	\$618.72	16	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	1.37	20%	3560.96	\$494.97	\$150.00	\$150.00	0.34	890.24	\$123.74	1.21

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
221.14	123 Sprinkler Room	1200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.12	139.2	\$19.35	2	0	No Change	58	0.12	0%	139.2	\$19.35	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	124	2600	34	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	1.97	5127.2	\$712.68	34	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	1.58	20%	4101.76	\$570.14	\$150.00	\$150.00	0.39	1025.44	\$142.54	1.05
232.21	124 Closet	1200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	103.2	\$14.34	1	0	No Change	86	0.09	0%	103.2	\$14.34	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 135	2600	18	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.93	5007.6	\$696.06	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.54	20%	4006.08	\$556.85	\$300.00	\$300.00	0.39	1001.52	\$139.21	2.15
242.21	Classroom 136	2600	18	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	1.93	5007.6	\$696.06	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.54	20%	4006.08	\$556.85	\$300.00	\$300.00	0.39	1001.52	\$139.21	2.15
221.11	Classroom 134	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 133	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 132	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 131	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 130	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 129	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
211.37	Boy's Room	2600	8	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic	30	0.24	624	\$86.74	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	30	0.19	20%	499.2	\$69.39	\$300.00	\$300.00	0.05	124.8	\$17.35	17.29
221.11	Classroom 128	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
211.37	Girl's Room	2600	8	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic	30	0.24	624	\$86.74	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	30	0.19	20%	499.2	\$69.39	\$300.00	\$300.00	0.05	124.8	\$17.35	17.29
221.11	Classroom 126	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 127	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79

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	Exit	3000	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	774	\$107.59	3	0	No Change	86	0.26	0%	774	\$107.59	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.31	Small Group 15	2600	16	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	62	0.99	2579.2	\$358.51	16	1	Dual Technology Occupancy Sensor - Switch Mnt.	62	0.79	20%	2063.36	\$286.81	\$150.00	\$150.00	0.20	515.84	\$71.70	2.09
128.34	Classroom 125	2600	16	2	8' Channel, 2 Lamp, 75w T12, Elect. Ballast, Pendant Mnt., No Lens	142	2.27	5907.2	\$821.10	16	1	Dual Technology Occupancy Sensor - Remote Mnt.	142	1.82	20%	4725.76	\$656.88	\$300.00	\$300.00	0.45	1181.44	\$164.22	1.83
221.11	Men's Room	2600	2	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.12	322.4	\$44.81	2	0	No Change	62	0.12	0%	322.4	\$44.81	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor 12 - 135	2600	30	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.58	6708	\$932.41	30	0	No Change	86	2.58	0%	6708	\$932.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 138	2600	21	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	2.25	5842.2	\$812.07	21	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.80	20%	4673.76	\$649.65	\$300.00	\$300.00	0.45	1168.44	\$162.41	1.85
242.21	Classroom 138 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Classroom 139	2600	21	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	2.25	5842.2	\$812.07	21	1	Dual Technology Occupancy Sensor - Remote Mnt.	107	1.80	20%	4673.76	\$649.65	\$300.00	\$300.00	0.45	1168.44	\$162.41	1.85
242.21	Classroom 139 Toilet	2600	1	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.11	278.2	\$38.67	1	0	No Change	107	0.11	0%	278.2	\$38.67	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.11	Classroom 140	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 141	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 142	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 143	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 144	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 145	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 146	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2901.6	\$403.32	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.89	20%	2321.28	\$322.66	\$300.00	\$300.00	0.22	580.32	\$80.66	3.72

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
221.11	Classroom 147	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 148	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2901.6	\$403.32	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.89	20%	2321.28	\$322.66	\$300.00	\$300.00	0.22	580.32	\$80.66	3.72
221.11	Classroom 149	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 150	2600	24	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.49	3868.8	\$537.76	24	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	1.19	20%	3095.04	\$430.21	\$300.00	\$300.00	0.30	773.76	\$107.55	2.79
221.11	Classroom 152	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 153	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 154	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 155	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 156	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 157	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 158	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 159	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
221.11	Classroom 160	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2901.6	\$403.32	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.89	20%	2321.28	\$322.66	\$300.00	\$300.00	0.22	580.32	\$80.66	3.72
232.21	Corridor 138 - 150	3000	30	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.58	7740	\$1,075.86	30	0	No Change	86	2.58	0%	7740	\$1,075.86	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Main Corridor	3000	24	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.06	6192	\$860.69	24	0	No Change	86	2.06	0%	6192	\$860.69	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Main Office	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2683.2	\$372.96	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.83	20%	2146.56	\$298.37	\$300.00	\$300.00	0.21	536.64	\$74.59	4.02

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	Office #1	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	357.76	\$49.73	\$150.00	\$150.00	0.03	89.44	\$12.43	12.07
232.21	Office #2	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	357.76	\$49.73	\$150.00	\$150.00	0.03	89.44	\$12.43	12.07
232.21	Office #3	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	357.76	\$49.73	\$150.00	\$150.00	0.03	89.44	\$12.43	12.07
232.21	Office #4	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$62.16	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.14	20%	357.76	\$49.73	\$150.00	\$150.00	0.03	89.44	\$12.43	12.07
221.11	Classroom 77/78	2600	12	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	0.74	1934.4	\$268.88	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.60	20%	1547.52	\$215.11	\$300.00	\$300.00	0.15	386.88	\$53.78	5.58
242.21	76	2600	4	4	2x4, 4 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	107	0.43	1112.8	\$154.68	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	107	0.34	20%	890.24	\$123.74	\$150.00	\$150.00	0.09	222.56	\$30.94	4.85
221.11	Classroom 162	2600	18	2	1x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Surface Mnt., Prismatic Lens	62	1.12	2901.6	\$403.32	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	62	0.89	20%	2321.28	\$322.66	\$300.00	\$300.00	0.22	580.32	\$80.66	3.72
111.11	Office 85	2600	3	1	1x4, 1-Lamp, 34w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	48	0.14	374.4	\$52.04	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	48	0.12	20%	299.52	\$41.63	\$150.00	\$150.00	0.03	74.88	\$10.41	14.41
Totals			1,799	400			142.3	366,291.4	\$50,915	1,799	98			118.8		305,087.6	\$42,407.18		\$26,700	23.43	61,204	\$8,507	3.14

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