BYRAM TOWNSHIP SCHOOL DISTRICT
INTERMEDIATE SCHOOL

12 MANSFIELD DRIVE,
STANHOPE, NJ 07874

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:	Jersey Central Power & Light
Electric Utility Rate Structure:	General Service Secondary 3 Phase (JC_GS3_01D)
Third Party Supplier:	Direct Energy

#2 Fuel Oil Utility Provider:	Finch Fuel Oil Co, INC
Utility Rate Structure:	Time of Delivery Price
Third Party Supplier:	N/A

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 oil usage profile within this facility report shows the actual oil energy usage for the facility. The oil utility measures consumption in Gallons.

Power Purchase Provider:	Sunlight General Capital
PPA Rate Structure:	Annual Fixed Price per kWh
PPA Energy Source:	Onsite Solar

The district entered into a Power Purchase Agreement to purchase electric supply generated by an onsite solar array in March 2013. The district is responsible for purchasing all of the power generated by the system at a fixed price per kilowatt-hours (KWH) for any time period after March 2013. The Electric Billing Data summarized in Table 1does not reflect the net electric used by the facility based on utility purchased electric and onsite solar due to the differential in time periods in which bills were acquired and when the on-site solar became available.

Table 1
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: Jersey Central Power & Light
Rate: General Service Secondary 3 Phase JC_GS3_01D
Meter No: L86369664
Account No: 10 00 22 0725 28
Third Party Utility Provider: Direct Energy
TPS Meter / Acct No: -

MONTH OF USE	CONSUMPTION KWH	DEMAND KW	TOTAL BILL
Mar-12	58,044	222.4	$7,593
Apr-12	63,484	238.7	$8,274
May-12	68,604	261.4	$9,083
Jun-12	62,524	168.2	$7,795
Jul-12	61,884	168.0	$7,726
Aug-12	63,324	255.2	$8,483
Sep-12	67,164	229.6	$8,596
Oct-12	42,844	229.6	$6,031
Nov-12	39,644	229.6	$5,694
Dec-12	56,444	190.1	$7,241
Jan-13	57,884	194.9	$7,405
Feb-13	54,364	204.5	$7,096
Totals	**696,208**	**261.4 Max**	**$91,018**

AVERAGE DEMAND **216.0 KW average**
AVERAGE RATE **$0.131** **$/kWh**

Figure 1
Electricity Usage Profile

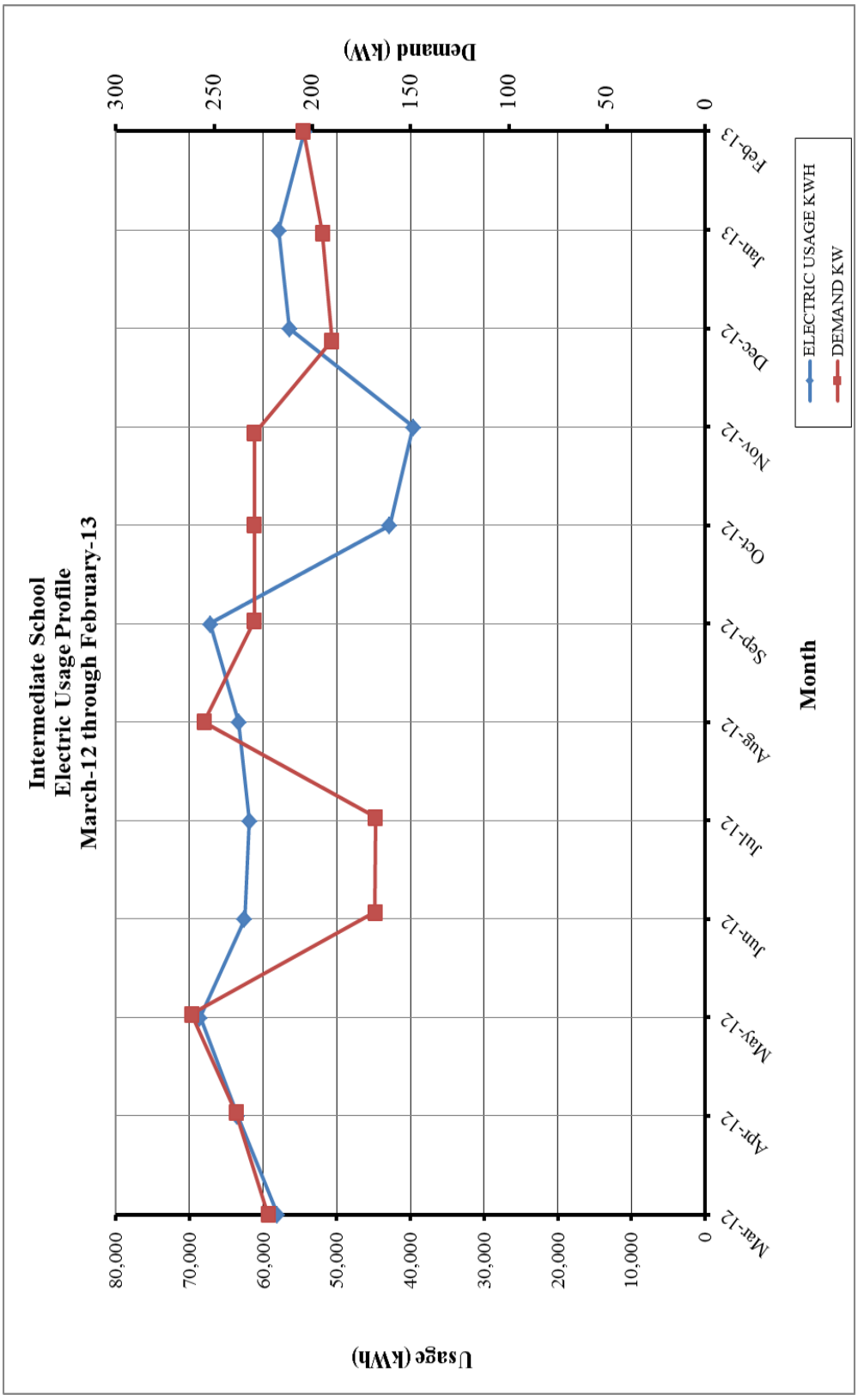
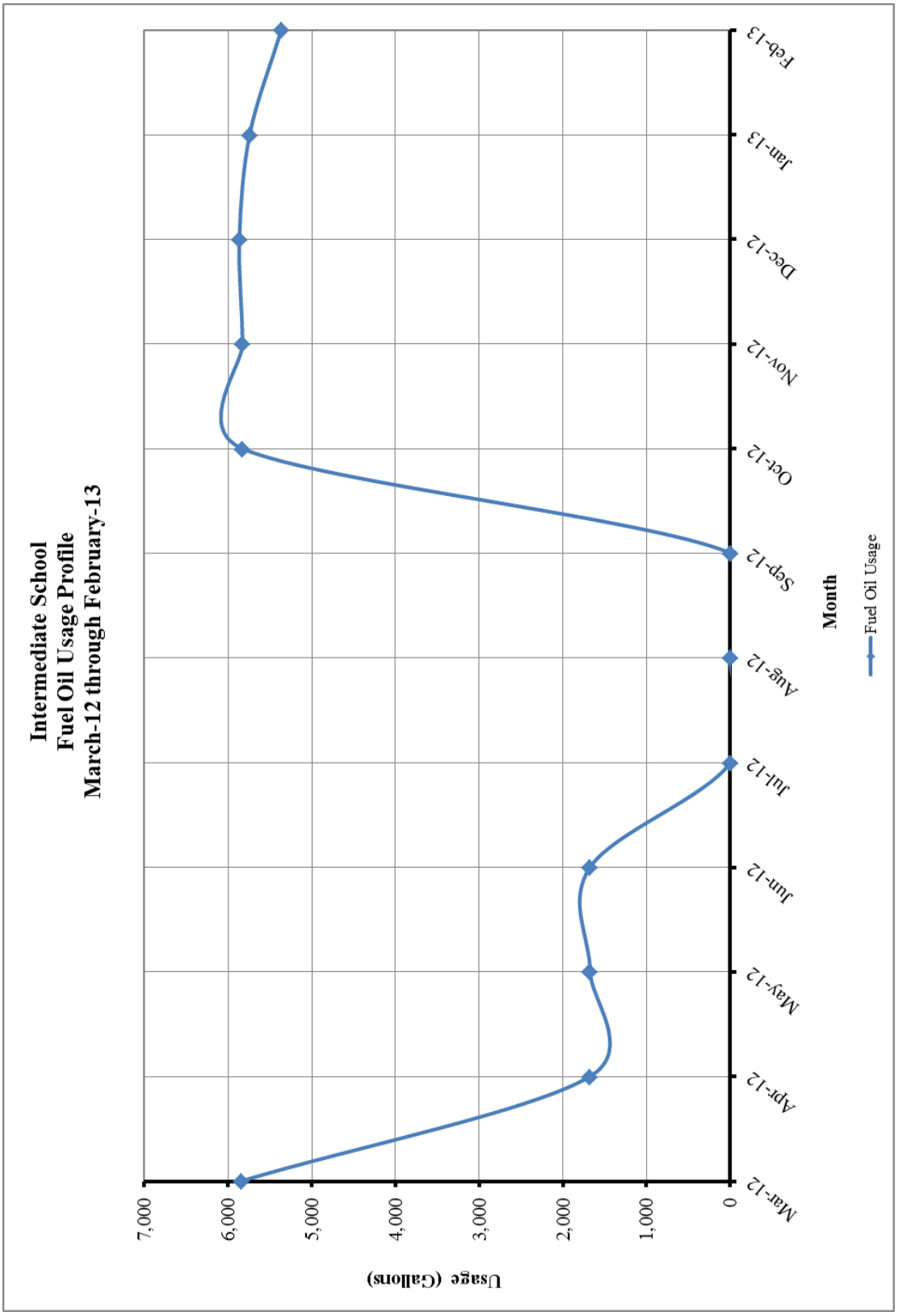


Table 2
#2 Fuel Oil Billing Data

FUEL OIL USAGE SUMMARY		
Utility Provider: Finch Fuel Oil Co, INC		
Point of Delivery ID: 1996		
Rate: Based on Time of Delivery Price		
MONTH OF USE	**CONSUMPTION (GALLONS)**	**TOTAL BILL**
Mar-12	5,843.00	$18,730.32
Apr-12	1,675.70	$4,655.17
May-12	1,675.70	$4,655.17
Jun-12	1,675.70	$4,655.17
Jul-12	0.00	$0.00
Aug-12	0.00	$0.00
Sep-12	0.00	$0.00
Oct-12	5,834.00	$20,247.48
Nov-12	5,826.00	$18,928.68
Dec-12	5,865.00	$19,729.28
Jan-13	5,742.00	$20,503.53
Feb-13	5,363.00	$17,760.11
TOTALS	**39,500.10**	**$129,864.91**
AVERAGE RATE:	**$3.29**	**$/Gallon**

Figure 2
#2 Fuel Oil Usage Profile



II. FACILITY DESCRIPTION

The Byram Intermediate School is a single story structure, consisting of three sections. The original building was constructed in 1967, an open space metal building addition built in 1978 and an annex built in 1980. The school is approximately 68,800 total square feet. The walls are brick/air space/block construction with minimum insulation to provide a medium barrier against outside temperature transmission and air infiltration. The thickness and thermal resistance value of the insulation is unknown.

The windows and exterior doors appear to be older units. The weather-stripping and caulking around the windows and doors in the open space building appear to be in poor condition. Several windows have venetian blinds to reduce heat loss in the winter and solar heat gains in the summer. Most of the roof is composed of a rubber membrane with approximately 2-inch insulation board on a metal decking. Portions of the roof are sloped and have metal standing seam covers.

HVAC Systems

The original building (1967) and the open space building (1978) are heated by a HB Smith, 450 MILLS oil-fired hot water boiler (3,815 MBH output) installed with the base building and a Burnham, V1119 oil-fired hot water boiler (3,969 MBH output) installed in 2007. Two (2) Armstrong base-mounted 5 HP end-suction heating hot water pumps feed the original building and two (2) Armstrong base-mounted 3 HP end-suction heating hot water pumps feed the metal building. Both sets of pumps can both provide 100% flow (with one pump as back-up). The Annex (1980) is heated by a HB Smith, 350 MILLS oil-fired hot water boiler (3,569 MBH output). Two (2) Armstrong base-mounted 3 HP end-suction heating hot water pumps feed the Annex with one pump as standby. This equipment appears to be well maintained.

All classrooms in the original building (1967) appear to have the original Nesbitt unit ventilators consisting of hot water coils, outside air ventilation and pneumatic controls. The exterior walls of the classrooms are provided with perimeter fin tube radiation heating. A 5-Ton packaged rooftop AC unit (Trane Model No. TCC060) provides cooling for the Main Office spaces. The classrooms in the metal building (1978) have the original Nesbitt unit ventilators consisting of hot water coils, outside air ventilation, DX coil, compressor and pneumatic controls. Two of the unit ventilators have a split condensing unit on the roof. There is also a rooftop split AC unit that feeds an air handler unit which supplements the unit ventilators with additional cooling. The Annex (1980) classrooms do not have air conditioning but are heated and ventilated by Nesbitt unit ventilators that consist of hot water coils, outside air ventilation and pneumatic controls. The Superintendent's Office, Child Study Team Office, Library, Music Room, Cafeteria, and Kitchen are cooled by a roof-mounted, air-cooled chiller (Trane Model No. CGADC50). Three (3) central, constant volume, single zone air handling units (Centralaire Model No. L1420 and L0612) in the roof penthouse equipped with hot water coils & chilled water coils distribute conditioned air to these spaces. The business offices are cooled by three (3) pad-mounted, split AC units (Trane Model No. TTB018) which feed three unit ventilators. These HVAC units all appear to be well maintained.

The Gym is heated and ventilated by four (4) central air handling units consisting of hot water heating coils and supply air fans located in the ceiling. Four roof-mounted centrifugal fans provide minimal air movement/circulation. Additionally, there are two relief vents located at either end of the Gym that provide relief air when outside air is introduced to the area through the air handling units. The All Purpose Room/Kitchen in the original building (1967) are heated and ventilated by an air handling unit (Carrier) located in the kitchen storage room. The Stage is heated and ventilated by an air handling unit (Carrier) located in the ceiling of the stage area. The All Purpose Room/Kitchen in the Annex building (1980) are heated and ventilated by an air handling unit (Carrier) located in the kitchen storage room. These HVAC units all appear to be well maintained.

Exhaust System

Air is exhausted from the toilet rooms through roof exhausters. Mechanical/electrical rooms, all purpose room, administration offices, science wing classrooms, prep rooms, and storage rooms have individual roof exhaust fans. Classrooms and corridors are tied into a common relief/exhaust system.

HVAC System Controls

The entire building HVAC is controlled by a Powers pneumatic controls system with controllers located in various mechanical/utility rooms. The HVAC equipment has all pneumatic controls and room/zone thermostats. The system monitors outside air temperature, status of hot water/chilled water pumps, the air compressor, boiler failure, hot water supply zone temperature, etc. This system can also shut down equipment in the building where applicable via an occupied time schedule. The school is generally operated between 7 AM and 5 PM during the weekdays of the school year.

Domestic Hot Water

Two (2) oil-fired, domestic water heaters (Bock Model No. 72E with 199 MBH input capacity) and two (2) inline circulating pumps provide domestic hot water demand. The domestic hot water is circulated throughout the building by hot water re-circulation pumps. The circulation pumps are controlled by an aqua stat. The domestic hot water piping insulation appeared to be in fair condition.

Lighting

Typical interior lighting throughout the building is fluorescent tube lay-in/surface-mounted fixtures with modern T-8 lamps and electronic ballasts. Several incandescent lamps have been observed and are recommended for replacement.

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

Kitchen

The full-cooking, all-electric kitchens (both in the original building and Annex) consist of upright refrigerators, double-stack electric convection ovens, electric ranges, combination oven steamers, walk-in refrigerators, walk-in freezers, electric booster water heaters, etc.

The walk-in refrigerator and freezer boxes are served by condenser units located on the side/top of the walk-in boxes.

III. MAJOR EQUIPMENT LIST

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

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

IV. ENERGY CONSERVATION MEASURES

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

Table 1
ECM Financial Summary

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST[A]**	**ANNUAL SAVINGS[B]**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
ECM #1	Lighting Upgrade - General	$4,530	$1,505	3.0	398.3%
ECM #2	Lighting Controls Upgrade	$7,725	$2,684	2.9	421.2%
ECM #3	Lighting Upgrade - Exterior	$3,900	$698	5.6	168.5%
ECM #4	NEMA Premium Motor Replacements	$13,147	$426	30.9	-41.7%
ECM #5	Walk-in Refrigeration Controls	$1,850	$230	8.0	86.5%
ECM #6	DDC Controls Upgrade	$350,000	$7,863	44.5	-66.3%
ECM #7	AC Unit Replacements	$26,510	$861	30.8	-51.3%
ECM #8	Air Cooled Chiller Replacement	$85,200	$971	87.7	-71.5%

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

Table 2
ECM Energy Summary

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**#2 FUEL OIL (GALLONS)**
ECM #1	Lighting Upgrade - General	5.5	11,488	-
ECM #2	Lighting Controls Upgrade	-	20,488	-
ECM #3	Lighting Upgrade - Exterior	1.3	5,328	-
ECM #4	NEMA Premium Motor Replacements	1.6	3,275	-
ECM #5	Walk-in Refrigeration Controls	-	1,755	-
ECM #6	DDC Controls Upgrade	-	10,591	1,968
ECM #7	AC Unit Replacements	6.0	6,570	-
ECM #8	Air Cooled Chiller Replacement	5.3	7,411	-

Notes: Utility reductions denoted with a "-" means there are no associated savings for that measure.

Table 3
ECM Emissions Summary

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	DESCRIPTION	GREENHOUSE GAS EMISSIONS REDUCTION		
		CO_2 EMISSIONS (LBS)	NO_X EMISSIONS (LBS)	SO_2 EMISSIONS (LBS)
ECM #1	Lighting Upgrade - General	17,462	32	75
ECM #2	Lighting Controls Upgrade	31,142	57	133
ECM #3	Lighting Upgrade - Exterior	8,099	15	35
ECM #4	NEMA Premium Motor Replacements	4,978	9	21
ECM #5	Walk-in Refrigeration Controls	2,668	5	11
ECM #6	DDC Controls Upgrade	40,364	30	69
ECM #7	AC Unit Replacements	9,986	18	43
ECM #8	Air Cooled Chiller Replacement	11,265	21	48

Notes: A. Emissions Reduction based on NJCEP published factors for electric & oil.

Table 4
Facility Project Summary

FACILITY PROJECT SUMMARY TABLE					
ENERGY CONSERVATION MEASURES	**ANNUAL ENERGY SAVINGS ($)**	**PROJECT COST ($)**	**SMART START INCENTIVES**	**CUSTOMER COST**	**SIMPLE PAYBACK**
Lighting Upgrade - General	$1,505	$4,530	$0	$4,530	3.0
Lighting Controls Upgrade	$2,684	$9,100	$1,375	$7,725	2.9
Lighting Upgrade - Exterior	$698	$3,900	$0	$3,900	5.6
NEMA Premium Motor Replacements	$426	$13,147	$0	$13,147	30.9
Walk-in Refrigeration Controls	$230	$2,000	$150	$1,850	8.0
DDC Controls Upgrade	$7,863	$350,000	$0	$350,000	44.5
AC Unit Replacements	$861	$27,200	$690	$26,510	30.8
Air Cooled Chiller Replacement	$971	$87,500	$2,300	$85,200	87.7
Total Project	**$15,238**	**$497,377**	**$4,515**	**$492,862**	**32.3**

Note the measure totals in this table do not take into account interactive effects of measures; see Method of Analysis Section III in Executive Report for further explanation.

ECM #1: Lighting Upgrade – General

Description:

The majority of the interior lighting throughout Byram Intermediate School is provided with fluorescent fixtures with older generation, 32W T8 lamps and electronic ballasts. Several areas contain older inefficient incandescent fixtures as well as T12 fixtures which reside in the shop classroom. These spaces would be better served with a more efficient fluorescent T8 and LED lighting system. Concord Engineering recommends upgrading the lighting to an energy-efficient fluorescent and LED system.

This ECM includes replacement of any incandescent lamps with LED lamps which can be retrofit into existing incandescent A-lamp or PAR fixtures. LED fixtures provide equivalent lumens and much longer burn hours but at reduced wattages. In addition, this ECM also replaces T12 fixtures with T8 lamps and electronic ballasts.

Energy Savings Calculations:

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

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$4,530
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$4,530
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$1,505
Total Yearly Savings ($/Yr):	$1,505
Estimated ECM Lifetime (Yr):	15
Simple Payback	3.0
Simple Lifetime ROI	398.3%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$22,575
Internal Rate of Return (IRR)	33%
Net Present Value (NPV)	$13,436.59

ECM #2: Lighting Controls Upgrade – Occupancy Sensors

Description:

Some of the lights in the Byram Intermediate 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.

This ECM includes installation of ceiling or switch mount sensors for offices, classrooms, and restrooms. 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:

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

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

Rebates and Incentives:

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

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

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$9,100
NJ Smart Start Equipment Incentive ($):	$1,375
Net Installation Cost ($):	$7,725
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$2,684
Total Yearly Savings ($/Yr):	$2,684
Estimated ECM Lifetime (Yr):	15
Simple Payback	2.9
Simple Lifetime ROI	421.2%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$40,260
Internal Rate of Return (IRR)	34%
Net Present Value (NPV)	$24,316.42

ECM #3: Lighting Upgrade – Exterior Lighting

Description:

The exterior lighting at Byram Intermediate School is currently lit by high pressure sodium parking fixtures. The exterior would be better served with more efficient LED lighting system. Concord Engineering recommends upgrading the lighting to an energy-efficient LED lighting system that includes LED lamps for the existing high pressure sodium parking lot fixtures around the exterior.

This ECM would replace the existing exterior lamps with equivalent LED parking lot retrofit lamps.

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.

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$3,900
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$3,900
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$698
Total Yearly Savings ($/Yr):	$698
Estimated ECM Lifetime (Yr):	15
Simple Payback	5.6
Simple Lifetime ROI	168.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$10,470
Internal Rate of Return (IRR)	16%
Net Present Value (NPV)	$4,432.68

ECM #4: Install NEMA Premium® Efficiency Motors

Description:

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

The electric motors driving the air handling units, hot water pumps and condensate return pumps are candidates for replacing with premium efficiency motors. These standard efficiency motors run considerable amount of time over a year.

This energy conservation measure replaces existing inefficient electric motors with NEMA Premium® efficiency motors. NEMA Premium® is the most efficient motor designation in the marketplace today. (Note: There are currently no NJ OCE incentives for premium efficiency motors.)

IMPLEMENTATION SUMMARY					
EQMT ID	**FUNCTION**	**MOTOR HP**	**HOURS OF OPERATION**	**EXISTING EFFICIENCY**	**NEMA PREMIUM EFFICIENCY**
P-1	Chilled Water Loop	3	1,000	82.0%	89.5%
P-2	Chilled Water Loop	3	1,000	82.0%	89.5%
P-3	Hot Water Loop	5	2,000	87.5%	90.2%
P-4	Hot Water Loop	5	2,000	85.0%	90.2%
P-5	Hot Water Loop	3	2,000	86.5%	89.5%
P-6	Hot Water Loop	3	2,000	86.5%	89.5%
F-1	Penthouse AHU Supply Fan	7.5	4,000	88.5%	91.7%
P-7	Hot Water Open Area	7.5	2,000	87.5%	91.7%
P-8	Hot Water Open Area	7.5	2,000	87.5%	91.7%

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

where, HP = Motor Nameplate Horsepower Rating

LF = Load Factor Motor Efficiency = Motor Nameplate Efficiency

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

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

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

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

PREMIUM EFFICIENCY MOTOR CALCULATIONS							
EQMT ID	**MOTOR HP**	**LOAD FACTOR**	**EXISTING EFFICIENCY**	**NEMA PREMIUM EFFICIENCY**	**POWER SAVINGS kW**	**ENERGY SAVINGS kWH**	**COST SAVINGS**
P-1	3	90%	82.0%	89.5%	0.21	207	$27
P-2	3	90%	82.0%	89.5%	0.21	207	$27
P-3	5	90%	87.5%	90.2%	0.11	231	$30
P-4	5	90%	85.0%	90.2%	0.23	458	$60
P-5	3	90%	86.5%	89.5%	0.08	157	$20
P-6	3	90%	86.5%	89.5%	0.08	157	$20
F-1	7.5	90%	88.5%	91.7%	0.20	798	$104
P-7	7.5	90%	87.5%	91.7%	0.26	530	$69
P-8	7.5	90%	87.5%	91.7%	0.26	530	$69
TOTAL					**1.6**	**3,275**	**$426**

Equipment Cost

The following table outlines the summary of motor replacement costs:

MOTOR REPLACEMENT SUMMARY					
EQMT ID	**MOTOR POWER HP**	**INSTALLED COST**	**NET COST**	**TOTAL SAVINGS**	**SIMPLE PAYBACK**
P-1	3	$1,049	$1,049	$27	39.0
P-2	3	$1,049	$1,049	$27	39.0
P-3	5	$1,519	$1,519	$30	50.6
P-4	5	$1,519	$1,519	$60	25.5
P-5	3	$1,049	$1,049	$20	51.4
P-6	3	$1,049	$1,049	$20	51.4
F-1	7.5	$1,971	$1,971	$104	19.0
P-7	7.5	$1,971	$1,971	$69	28.6
P-8	7.5	$1,971	$1,971	$69	28.6
TOTAL	**Totals:**	**$13,147**	**$13,147**	**$426**	**30.9**

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$13,147
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$13,147
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$426
Total Yearly Savings ($/Yr):	$426
Estimated ECM Lifetime (Yr):	18
Simple Payback	30.9
Simple Lifetime ROI	-41.7%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$7,668
Internal Rate of Return (IRR)	-5%
Net Present Value (NPV)	($7,288.00)

ECM #5: Walk-In Controls

The Byram Intermediate School has two walk-in coolers/freezers that store food for the kitchen. Each box has an evaporator with fans to circulate cold air, one in the refrigerator, and one in the freezer. These fans operate continuously whether the compressor is on or off resulting in unnecessary heat buildup in the box due to the fan motors.

This measure would install an evaporator fan controller and EC Motors that features two-speed operation of the evaporator fans – high speed during cooling and low speed or off when not cooling manufactured by Frigitek or equivalent.

Energy Savings Calculations:

Energy savings calculations are based on New Jersey Board of Public Utilities Protocols to Measure Resource Savings. The energy savings are calculated using existing equipment characteristics.

$$\text{kWh Savings Evap Fans} = \frac{\left(\text{Amps} \times \text{Volts} \times \text{Phase}^{\frac{1}{2}}\right)}{1000} \times 0.55 \times 8760 \times 35.52\%$$

$$\text{kWh Savings Evap Reduced Heat} = \text{kWh Savings Evap Fans} \times 0.28 \times 1.6$$

$$\text{kWh Savings Controls} = \frac{\text{Amps}_{\text{CP}} \times \text{Volts}_{\text{CP}} \times \text{Phase}_{\text{CP}}^{\frac{1}{2}}}{1000} \times 0.85 \times (35\% \times 2{,}195\ \text{Hrs} + 55\% \times 6{,}565\ \text{Hrs}) + \frac{\text{Amps}_{\text{EF}} \times \text{Volts}_{\text{EF}} \times \text{Phase}_{\text{EF}}^{\frac{1}{2}}}{1000} \times 0.55 \times 8760 \times 35.52\% \times 5\%$$

CALCULATION CONSTANTS	
Evaporator Fan Motor Power Factor	0.55
ConversIon kW to ton (Refrigeration)	0.28
Efficiency of Typical System (kW/ton)	1.6
Compressor Power Factor	0.85
Compressor Winter Runtime	2195
Compressor Winter Duty Cycle	35%
Compressor Non-Winter Runtime	6565
Compressor Non-Winter Duty Cycle	55%
Reduced Runtime due to Controls	5%
Percent Time Evaporator is Turned Off	35.52%

WALK-IN COOLER/FREEZER EVAPORATOR FAN CONTROL			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	No Controller	Frigitek Controller	
Qty of Evaporator Fans	1	1	
Nameplate Amps of Evap Fan	1.8	1.8	
Nameplate Volts of Evap Fan	115	115	
Phase of Evap Fan	1	1	
Nameplate Amps of Compressor	6.0	6.0	
Nameplate Volts of Compressor	208	208	
Phase of Compressor	3	3	
Elec Cost ($/kWh)	$0.131	$0.131	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Evaporator Fan Usage (KWH)	997	643	354
Evap Fan Heat Usage (KWH)	447	288	159
Compressor Usage (KWH)	8,046	7,644	402
Total Electric Usage (KWH)	9,490	8,575	915
Electric Cost ($)	$1,243	$1,123	$120
COMMENTS:	Walk-In #1		

WALK-IN COOLER/FREEZER EVAPORATOR FAN CONTROL			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	No Controller	Frigitek Controller	
Qty of Evaporator Fans	1	1	
Nameplate Amps of Evap Fan	0.9	0.9	
Nameplate Volts of Evap Fan	208	208	
Phase of Evap Fan	1	1	
Nameplate Amps of Compressor	6.0	6.0	
Nameplate Volts of Compressor	208	208	
Phase of Compressor	3	3	
Elec Cost ($/kWh)	$0.131	$0.131	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Evaporator Fan Usage (KWH)	852	549	303
Evap Fan Heat Usage (KWH)	382	246	136
Compressor Usage (KWH)	8,046	7,644	402
Total Electric Usage (KWH)	9,279	8,439	840
Electric Cost ($)	$1,216	$1,105	$110
COMMENTS:	Walk-In #2		

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$2,000
NJ Smart Start Equipment Incentive ($):	$150
Net Installation Cost ($):	$1,850
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$230
Total Yearly Savings ($/Yr):	$230
Estimated ECM Lifetime (Yr):	15
Simple Payback	8.0
Simple Lifetime ROI	86.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$3,450
Internal Rate of Return (IRR)	9%
Net Present Value (NPV)	$895.73

ECM #6: Digital Energy Management System (BMS) Upgrades

Description:

Currently the Byram Intermediate School only contains pneumatic controls for the boiler and local controls for the split systems and chiller. Upgrading their current system would allow Byram Township School District to save significant energy. This BMS includes such features as night setback, scheduling equipment, changing set-points, viewing status of the building, space temperatures, optimal start/stop, building pre-cooling, etc.

Concord Engineering recommends integrating a controls system with the latest operating platform featuring boiler plant optimization, outside air reset, supply air temperature reset, etc.

This ECM includes installation of the Automated Logic web based management system. This system will allow complete control over all current systems within the Intermediate School. (Note: There are currently no NJ OCE incentives for HVAC controls upgrades.)

Energy Savings Calculations:

The following table summarizes energy savings for this facility via implementation of a Building Management System:

CONTROLS SAVINGS CALCULATIONS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
HVAC Usage Electric (kBtu)	722,724	686,588	36,136
HVAC Usage Oil (kBtu)	5,472,054	5,198,451	273,603
Savings Percentage	-	5.0%	
Electric Site Conversion (kWh/kBtu)	3.412	3.412	
Oil Site Conversion (Gallon/kBtu)	139.0	139.0	
Electric Cost ($/kWh)	$0.131	$0.131	
Oil Cost ($/Gallon)	$3.290	$3.290	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Usage (kWh)	211,818	201,227	10,591
Oil Usage (Gallons)	39,367	37,399	1,968
Energy Cost ($)	$157,267	$149,403	$7,863
COMMENTS:			

Savings from the implementation of this ECM will be from the reduced energy consumption currently used by the HVAC system by improved control of temperatures and optimization of the central plant via the upgraded DDC system.

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$350,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$350,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$7,863
Total Yearly Savings ($/Yr):	$7,863
Estimated ECM Lifetime (Yr):	15
Simple Payback	44.5
Simple Lifetime ROI	-66.3%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	$117,945
Internal Rate of Return (IRR)	-11%
Net Present Value (NPV)	($256,132.02)

ECM #7: Replace AC Units with High Efficiency Units

Description:

The Byram Intermediate School has several split system air conditioning only units and one packaged unit which serve some interior spaces. These units are approaching their ASHRAE service life expectancy. Replacing these units with newer more efficient units could result in significant energy savings.

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

This ECM includes one-for-one replacement of the older split system and rooftop units with new higher efficiency systems as well as replacing existing evaporator coils with new R410 coils. It is recommended to fully evaluate the capacity needed for all new systems prior to moving forward with this ECM. A summary of the unit replacement for this ECM can be found in the table below:

IMPLEMENTATION SUMMARY					
ECM INPUTS	**SERVICE FOR**	**NUMBER OF UNITS**	**COOLING CAPACITY, BTU/HR**	**TOTAL CAPACITY, TONS**	**REPLACE UNIT WITH**
SS	Split System	1	24,000	2.0	Sanyo KS2472 / CL2472
SS	Split System	1	18,000	1.5	Sanyo KS1872 / CL1872
SS	Split System	3	18,000	1.5	York CZH024 Condensing Unit w/ AVG24 Cooling Coil
RTU	Offices	1	60,000	5.0	York NM060
Total		**6**	**120,000**	**10.0**	

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

Energy Savings Calculations:

Cooling Energy Savings:

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

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

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

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

ENERGY SAVINGS CALCULATIONS							
ECM INPUTS	**COOLING CAPACITY, BTU/Hr**	**ANNUAL COOLING HOURS**	**EXISTING UNITS EER**	**NEW UNITS EER**	**# OF UNITS**	**ENERGY SAVINGS kWh**	**DEMAND SAVINGS kW**
SS	24,000	1,100	10 SEER	17 SEER	1	1,087	1.0
SS	18,000	1,100	10 SEER	20 SEER	1	990	0.9
SS	18,000	1,100	10 SEER	20 SEER	3	2,970	2.7
RTU	60,000	1,100	10 SEER	13 SEER	1	1,523	1.4
Total					6	6,570	6.0

Project Cost, Incentives and Maintenance Savings

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

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

AC UNITS REBATE SUMMARY				
UNIT DESCRIPTION	**UNIT EFFICIENCY**	**REBATE $/TON**	**PROPOSED CAPACITY TONS**	**TOTAL REBATE $**
5.4 tons or less Unitary AC and Split System	≥14 SEER	$92	7.5	$690
TOTAL			**7.5**	**$690**

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

COST & SAVINGS SUMMARY							
ECM INPUTS	**INSTALLED COST**	**# OF UNITS**	**TOTAL COST**	**REBATES**	**NET COST**	**ENERGY SAVINGS**	**PAY BACK YEARS**
SS	$6,000	1	$6,000	$184	$5,816	$142	40.8
SS	$4,200	1	$4,200	$138	$4,062	$130	31.3
SS	$7,000	3	$7,000	$368	$6,632	$389	17.0
RTU	$10,000	1	$10,000	$0	$10,000	$200	50.1
Total	$27,200	6	$27,200	$690	$26,510	$861	30.8

Energy Savings Summary:

ECM #7 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$27,200
NJ Smart Start Equipment Incentive ($):	$690
Net Installation Cost ($):	$26,510
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$861
Total Yearly Savings ($/Yr):	$861
Estimated ECM Lifetime (Yr):	15
Simple Payback	30.8
Simple Lifetime ROI	-51.3%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$12,915
Internal Rate of Return (IRR)	-8%
Net Present Value (NPV)	($16,231.44)

ECM #8: Chiller Replacement

Description:

The Byram Intermediate School has a 50 ton air-cooled chiller on grade behind the gymnasium which supplies cooling to the unit ventilators in the classrooms. The chiller is not yet past its useful life but could be replaced with a much more efficient chiller up to today's standards.

This ECM includes the installation of a new high efficient air cooled chiller. The chiller is based on a 50 ton York Model YCAL0052.

Energy Savings Calculations:

$$\text{Electric Usage} = \text{Capacity (tons)} \times \frac{12{,}000\ \text{Btu}}{1000\ \text{W}} \times \frac{1}{\text{EER}} \times \text{Operating Hours}$$

$$\text{Demand Savings} = \text{Capacity (tons)} \times \left(\frac{1}{\text{EER}_{\text{Old}}} - \frac{1}{\text{EER}_{\text{New}}}\right) \times 67\%\ \text{Capacity Factor}$$

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

CHILLER CALCULATIONS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	Existing Air Cooled Chillers	High Efficiency Chiller	
Operating Capacity (Tons)	50.0	50.0	
Chiller Efficiency (EER)	9.0	10.2	
Full Load Cooling Hrs (Est.)	800	800	
Cooling Energy (kWh)	53,333	47,059	
Chiller Operating Hours (Year Round)	1,500	1,500	
Chiller Part Load Hours Est.	700	700	
Chiller IPLV (EER)	13.7	15.1	
Chiller Part Load %	40.0%	40.0%	
Part Load Cooling Energy (kWh)	12,263	11,126	
Elec Cost ($/kWh)	0.131	0.131	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Energy (kWh)	65,596	58,185	7,411
Electric Demand (KW)	44.7	39.4	5.3
Electric Energy Cost ($)	$8,593	$7,622	$971
COMMENTS:	York Model YCAL0052EE.		

Energy Savings Summary:

ECM #8 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$87,500
NJ Smart Start Equipment Incentive ($):	$2,300
Net Installation Cost ($):	$85,200
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$971
Total Yearly Savings ($/Yr):	$971
Estimated ECM Lifetime (Yr):	15
Simple Payback	87.7
Simple Lifetime ROI	-82.9%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$14,565
Internal Rate of Return (IRR)	-17%
Net Present Value (NPV)	($73,608.27)

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.

F. Replace any old CRT Monitors with LED/LCD Type Monitors, which can draw as much as a quarter the power of an equivalent CRT monitor.

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

H. Repair and replace the weather stripping and caulking around the windows and doors in the open space addition.

APPENDIX A

ECM COST & SAVINGS BREAKDOWN

CONCORD ENGINEERING GROUP

Byram Township School District - Byram Intermediate School

ECM ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY

ECM NO.	DESCRIPTION	INSTALLATION COST				YEARLY SAVINGS			ECM LIFETIME	LIFETIME ENERGY SAVINGS	LIFETIME MAINTENANCE SAVINGS	LIFETIME ROI	SIMPLE PAYBACK	INTERNAL RATE OF RETURN (IRR)	NET PRESENT VALUE (NPV)
		MATERIAL	LABOR	REBATES, INCENTIVES	NET INSTALLATION COST	ENERGY	MAINT. / SREC	TOTAL		(Yearly Saving * ECM Lifetime)	(Yearly Maint Svaing * ECM Lifetime)	(Lifetime Savings - Net Cost) / (Net Cost)	(Net cost / Yearly Savings)	$0 = \sum_{n=0}^{N} \frac{C_n}{(1+IRR)^n}$	$\sum_{n=0}^{N} \frac{C_n}{(1+DR)^n}$
		($)	($)	($)	($)	($/Yr)	($/Yr)	($/Yr)	(Yr)	($)	($)	(%)	(Yr)	($)	($)
ECM #1	Lighting Upgrade - General	$2,070	$2,460	$0	$4,530	$1,505	$0	$1,505	15	$22,575	$0	398.3%	3.0	32.75%	$13,436.59
ECM #2	Lighting Controls Upgrade	$6,950	$2,150	$1,375	$7,725	$2,684	$0	$2,684	15	$40,260	$0	421.2%	2.9	34.33%	$24,316.42
ECM #3	Lighting Upgrade - Exterior	$3,600	$300	$0	$3,900	$698	$0	$698	15	$10,470	$0	168.5%	5.6	15.95%	$4,432.68
ECM #4	NEMA Premium Motor Replacements	$8,074	$5,073	$0	$13,147	$426	$0	$426	18	$7,668	$0	-41.7%	30.9	-5.15%	($7,288.00)
ECM #5	Walk-in Refrigeration Controls	$1,200	$800	$150	$1,850	$230	$0	$230	15	$3,450	$0	86.5%	8.0	9.04%	$895.73
ECM #6	DDC Controls Upgrade	$210,000	$140,000	$0	$350,000	$7,863	$0	$7,863	15	$117,945	$0	-66.3%	44.5	-11.28%	($256,132.02)
ECM #7	AC Unit Replacements	$12,500	$14,700	$690	$26,510	$861	$0	$861	15	$12,915	$0	-51.3%	30.8	-7.88%	($16,231.44)
ECM #8	Air Cooled Chiller Replacement	$36,500	$51,000	$2,300	$85,200	$971	$0	$971	25	$24,275	$0	-71.5%	87.7	-7.98%	($68,291.83)

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 from July 1, 2013 to June 30, 2014:

Electric Chillers

Water-Cooled Chillers	$16 - $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 - $450 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
A/C Economizing Controls	≤ 5 tons $85/unit; >5 tons $170/unit

Energy Efficiency must comply with ASHRAE 90.1-2007

Gas Heating

Gas Fired Boilers < 300 MBH	$2.00 per MBH, but not less than $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	$400 per unit, AFUE ≥ 95%
Boiler Economizing Controls	$1,200 - $2,700
Low Intensity Infrared Heating	$300 - $500 per unit

Ground Source Heat Pumps

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

Energy Efficiency must comply with ASHRAE 90.1-2007

Variable Frequency Drives

Variable Air Volume	$65 - $155 per hp
Chilled-Water Pumps ≥ 20 hp	$60 per VFD rated hp
Rotary Screw Air Compressors ≥ 25 hp	$5,250 to $12,500 per drive
Cooling Towers ≥ 10 hp	$60 per VFD rated hp
Boiler Fans ≥ 5 HP	$65 to $155 per hp
Boiler Feed Water Pumps ≥ 5 HP	$60 to $155 per hp
Commercial Kitchen Hood up to 50 HP	Retrofit $55 – $300 per hp New Hood $55 - $250 per hp

Natural Gas Water Heating

Gas Water Heaters ≤ 50 gallons, 0.67 energy factor or better	$50 per unit
Gas-Fired Water Heaters > 50 gallons	$1.00 - $2.00 per MBH
Gas-Fired Booster Water Heaters	$17 - $35 per MBH
Gas Fired Tankless Water Heaters	$300 per unit

Prescriptive Lighting

T-8 reduced Wattage (28w/25w 4', 1-4 lamps) Lamp & ballast replacement	$10 per fixture
For retrofit of T-8 fixtures by permanent de-lamping & new reflectors (Electronic ballast replacement required)	$15 per fixture
T-5 and T-8 High Bay Fixtures	$16 - $200 per fixture
Metal Halide w/Pulse Start Including Parking Lot (For fixtures ≥ 150w)	$25 per fixture
HID ≥ 100w Replace with new induction fixture. (must be 30% less watts/fixture than HID system)	$70 per fixture
HID ≥ 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	$50 per fixture

Prescriptive Lighting - LED

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 Stairwell and Passageway Luminaires	$40 per fixture
LED Bollard Fixtures	$50 per fixture
Luminaires for Ambient Lighting of Interior Commercial Spaces (1x4, 2x2, 2x4)	$50 per fixture
LED Fuel Pump Canopy	$100 per fixture
LED Screw-based & Pin-based (PAR, MR, BR, R) Standards (A-Style) and Decorative Lamps	$10 per lamp for R/PAR20,MR/PAR16,Globe,Candelabra or Misc $20 per lamp for R/BR/PAR 30, R/BR/PAR 38-40, A-Lamp
LED Refrigerator/Freezer case lighting replacement of fluorescent in medium and low temperature display case	$30 per 4 foot $42 per 5 foot $65 per 6 foot
LED Retrofit Kits	To be evaluated through the customer measure path

Lighting Controls – Occupancy Sensors

Wall Mounted (Existing Facilities Only)	$20 per control
Remote Mounted (Existing Facilities Only)	$35 per control
Daylight Dimming Controls	$45 per fixture controlled
Occupancy Based hi-low Dimming Control	$35 per fixture controlled
Occupancy Sensor Remote Mounted	$35 per control

Refrigeration Doors/Covers

Energy-Efficient Doors/Covers for Installation on Open Refrigerated Cases	$100 per door
Aluminum Night Curtains for Installation on Open Refrigerated Cases	$3.50 per linear foot

Refrigeration Controls

Door Heater Controls	$50 per control
Electric Defrost Controls	$50 per control
Evaporator Fan Controls	$75 per control
Novelty Cooler Shutoff	$50 per control

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 an IRR of at least 10%.

APPENDIX C

ENERGY STAR® Statement of Energy Performance

25

ENERGY STAR® Score[1]

Byram Intermediate School

Primary Property Function: K-12 School
Gross Floor Area (ft²): 68,824
Built: 1967

For Year Ending: February 28, 2013
Date Generated: January 14, 2014

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address
Byram Intermediate School
12 Mansfield Drive
Stanhope, New Jersey 07874

Property Owner
Township of Byram Board of Education
12 Mansfield Drive
Stanhope, NJ 07874
(____)____-_____

Primary Contact
Theresa Linskey
12 Mansfield Drive
Stanhope, NJ 07874
973-347-1047
linskey.theresa@byramschools.org

Property ID: 3938633

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
113.7 kBtu/ft²

Source EUI
188.4 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	2,375,462 (30%)
Fuel Oil (No. 2) (kBtu)	5,451,014 (70%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	90.3
National Median Source EUI (kBtu/ft²)	149.6
% Diff from National Median Source EUI	26%

Annual Emissions

Greenhouse Gas Emissions (MtCO2e/year)	301

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____Date: _____

Licensed Professional

Michael Fischette
520 South Burnt Mill Road
Voorhees, NJ 08043
856-427-0200
mfischette@concord-engineering.com

Professional Engineer Stamp
(if applicable)

APPENDIX D

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Rooftop Units

Tag			
Unit Type	Packaged Rooftop Unit		
Qty	1		
Location	Roof		
Area Served			
Manufacturer	Trane		
Model #	TCC060F100BE		
Serial #	R3745JE2H		
Cooling Type	DX Coil		
Cooling (MBH)	60,000		
Heating Type	SEER = 10.0		
Heating (MBH)	-		
Supply Fan (HP)	208/230V		
Return Fan (HP)	13		
Approx Age	15		
ASHRAE Service Life	2		
Remaining Life			
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Split AC Units

Tag	CU-1	CU-2	CU-3
Unit Type	Condensing Unit	Condensing Unit	Condensing Unit
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served			
Manufacturer	Lennox	Goodman	Sanyo
Model #	10ACB24-9P	HDC18-1AB	C2672R
Serial #	5899B 53873	0008420387	43182
Cooling Type	DX Coil	DX Coil	DX Coil
Cooling Capacity (BTUH)	24,000	18,000	25,200
Cooling Efficiency	SEER = 10.0	SEER = 10.0	SEER = 14.9
Condenser Fan (HP)	1/6	1/15	
Electrical (V/H/P)	208/230V	208/230V	208/230V
Approx Age	14	13	5
ASHRAE Service Life	15	15	15
Remaining Life	1	2	10
Comments	Indoor Unit Model PKA-A18GA	Indoor Unit Model KH3672R	

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

Split AC Units

Tag			**CU-4 thru CU-6**
Unit Type	Split System	Condensing Units	Condensing Unit
Qty	1	2	3
Location	Roof	Roof	Pad-Mount
Area Served	Air Handling Unit Open Area	Unit Ventilators Open Area	Business Offices
Manufacturer	Carrier	-	Trane XB 1000
Model #	-	-	TTB018C100A2
Serial #	-	-	5192P205F, 5192RDR5F & 5192RC25F
Cooling Type	DX Coil	DX Coil	DX Coil
Cooling Capacity (BTUH)	-	-	18,000
Cooling Efficiency	-	-	SEER = 10.0
Condenser Fan (HP)	-	-	1/6
Electrical (V/H/P)	-	208/230V	208/230V
Approx Age	20	20	8
ASHRAE Service Life	15	15	15
Remaining Life	(5)	(5)	7
Comments	No Nameplate	No Nameplate	

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Boilers

Tag	B-1	B-2	B-3
Unit Type	Cast Iron Commercial Boiler	Cast Iron Commercial Boiler	Cast Iron Commercial Boiler
Qty	1	1	1
Location	Main Boiler Room	Main Boiler Room	Main Boiler Room
Area Served	Original 1967 and 1978 Sections	Original 1967 and 1978 Sections	1980 Annex
Manufacturer	HB Smith	Burnham	HB Smith
Model #	450 Mills	V1119	350 Mills
Serial #	"-"	64990035	"-"
Max Input	33.8 gallons #2 Oil	32.5 gallons #2 Oil	31.0 gallons #2 Oil
Capacity (MBH)	3,815 MBH	3,969 MBH	3,569 MBH
Approx. Efficiency %	70.0%	84.0%	70.0%
Fuel	#2 Fuel Oil	#2 Fuel Oil	#2 Fuel Oil
Approx Age	44	6	33
ASHRAE Service Life	24	24	24
Remaining Life	(20)	18	(9)
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Domestic Water Heaters

Tag	DHW-1	DHW-2
Unit Type	Oil-Fired Water Heater	Oil-Fired Water Heater
Qty	1	1
Location	Boiler Room	Boiler Room
Area Served	1967 & 1978 Spaces	1980 Annex
Manufacturer	Bock Water Heaters	Bock Water Heaters
Model #	72E	72E
Serial #	09093205T	03103222T
Size (Gallons)	68	67
Input Capacity (MBH)	199	199
Recovery (Gal/Hr)	212 GPH @ 90°F Rise	215 GPH @ 90°F Rise
Efficiency %	83.5%	83.5%
Fuel	#2 Fuel Oil (1.5 GPH)	#2 Fuel Oil (1.5 GPH)
Approx Age	4	3
ASHRAE Service Life	15	15
Remaining Life	11	12
Comments	1/7 HP Blower Fan	1/7 HP Blower Fan

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Pumps

Tag	P-1 & P-2	P-3	P-4
Unit Type	Base Mounted End Suction Pump	Base Mounted End Suction Pump	Base Mounted End Suction Pump
Qty	2	1	1
Location	Roof Penthouse	Boiler Room	Boiler Room
System Served	Chilled Water Loop	Hot Water Loop	Hot Water Loop
Manufacturer	Armstrong	Armstrong	Armstrong
Model #	-	-	-
Serial #	-	-	-
Horse Power	3	5	5
Flow	-	-	-
Motor Info	Leroy-Somer	Leeson Electric	Leroy Somer
Motor Model/Serial No.	F 010608 & F010594	C184T17DB39B	3N384-A
Electrical Power	208/230	208/230	208/230
RPM	1730	1760	1730
Motor Efficiency %	82.0%	87.5%	85.0%
Approx Age of Pump	15	23	23
ASHRAE Service Life	20	20	20
Remaining Life	5	(3)	(3)
Comments	Pumps Enclosed with Insulation Board	Serve Original Bldg. Pump Plate is Blank	Serve Original Bldg. Pump Plate is Blank

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

Pumps

Tag	P-5 & P-6	Booster Pumps	P-7 & P-8
Unit Type	Base Mounted End Suction Pump	Cold Domestic Water Booster Pumps	Base Mounted End Suction Pump
Qty	2	3	2
Location	Boiler Room	Boiler Room	Boiler Room
System Served	Hot Water Loop	Domestic Cold Water	Hot Water Loop - Open Area
Manufacturer	Armstrong	Grundfos	-
Model #	-	B42Z96811P1032…	-
Serial #	-	CRE8-40 UJ - G -A	-
Horse Power	3	3	5
Flow	-	42GPM @175' TDH	-
Motor Info	Dayton	Baldor	Wagner
Motor Model/Serial No.	3KW34B	36A090X95961	215-71012-06 ABF3W
Electrical Power	208/230	208/230	208/220/440
RPM	1765	3450	1750
Motor Efficiency %	86.5%	86.5%	87.5%
Approx Age of Pump	15	5	23
ASHRAE Service Life	20	20	20
Remaining Life	5	15	(3)
Comments		Grundfos CR8-40 Vertical Multi-Stage Centrifugal Pumps	Servers Open Area Pump Plate is Blank

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Motors

Tag			
Unit Type	Motor		
Qty	1		
Location	Penthouse		
Area Served	Air Handling Unit Fan		
Manufacturer	Gould Century Motors		
Catalog #	6-330778-02		
Horse Power	7.5		
Enclosure Type	DP		
Electrical Power	208/3		
RPM	1750		
Efficiency %	88.5%		
Approx Age	11		
ASHRAE Service Life	18		
Remaining Life	7		
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

Chiller

Tag	CH-1	
Unit Type	Air-Cooled Scroll Chiller	
Qty	1	
Location	Roof	
Area Served	Supt. Office, Child Study, Library, Music Room, Cafeteria & Kitchen	
Manufacturer	Trane	
Model #	CGADC50GAC..	
Serial #	J90E81083	
Refrigerant	R-22	
Cooling Capacity (Tons)	48-Ton	
Cooling Efficiency (KW/Ton)	9.8 EER	
Volts / Phase / Hz	200/230V	
Fuel	Electric	
Chilled Water GPM / ΔT	180 GPM @ 10°F ΔT	
Condenser Water GPM / ΔT	Air-Cooled	
Approx Age	23	
ASHRAE Service Life	25	
Remaining Life	2	
Comments		

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

Byram Intermediate School

AHUs

Tag	AHU-1	AHU-2	AHU-3
Unit Type	Single Zone, Central Air Handler	Single Zone, Central Air Handler	Single Zone, Central Air Handler
Qty	1	1	1
Location	Roof Penthouse	Roof Penthouse	Roof Penthouse
Area Served	Cafeteria	Admin Offices	Library
Manufacturer	Centralaire	Centralaire	Centralaire
Model #	L1420	L0612	L1420
Serial #	1028K01	1028K02	1028K03
Cooling Type	Chilled Water	Chilled Water	Chilled Water
Cooling Capacity (MBH)	-	-	-
Heating Type	Hot Water	Hot Water	Hot Water
Heating Input (MBH)	152	65	152
Fan Capacity (CFM)	7,000	3,000	7,200
Supply Fan (HP)	7.5	2	7.5
Approx Age	33	33	33
ASHRAE Service Life	25	25	25
Remaining Life	(8)	(8)	(8)
Comments			

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

APPENDIX E

CEG Project #: 1C13370
Facility Name: Byram Intermediate School
Address: 12 Mansfield Drive
City, State, Zip Stanhope, NJ 07874

EXISTING FIXTURES									PROPOSED FIXTURE RETROFIT							RETROFIT ENERGY SAVINGS			PROPOSED LIGHTING CONTROLS					LIGHTING RETROFIT COSTS					LIGHTING CONTROLS COST				
Fixture Reference #	Location	Average Burn Hours	Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Work Description	Equipment Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Energy Savings, kW	Energy Savings, kWh	Energy Savings, $	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Total Materials	Total Labor	Total All	Smart Start Incentive	Simple Payback
1	Science Classroom 201	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	25	2.75	7,150	Existing to remain	No Change	4	110	0	2.75	7,150	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,430	$187	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	1.15
3	Science Prep	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13		2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	5	0.31	806	Existing to remain	No Change	2	62	0	0.31	806	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	161	$21	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	3.79
1	Science Classroom 202	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	25	2.75	7,150	Existing to remain	No Change	4	110	0	2.75	7,150	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,430	$187	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	1.15
13	Science Hallway	3000	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	13	0.81	2,418	Existing to remain	No Change	2	62	0	0.81	2,418	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13	Girls Lavatory	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13	Boys Lavatory	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Storage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13	Bldg & Grounds Hallway	3000	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	9	0.56	1,674	Existing to remain	No Change	2	62	0	0.56	1,674	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13	Art Classroom	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	26	1.61	4,191	Existing to remain	No Change	2	62	0	1.61	4,191	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	838	$110	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	1.96
13	West Classroom	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to remain	No Change	2	62	0	1.12	2,902	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$76	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.83
13	West Classroom	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to remain	No Change	2	62	0	1.12	2,902	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$76	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.83
13	West Classroom	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to remain	No Change	2	62	0	1.12	2,902	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$76	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.83
4	Bldg & Grounds Office	2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	4	0.26	676	Existing to remain	No Change	2	65	0	0.26	676	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	135	$18	$0.00	$0.00	$0.00	$0.00	-	$100.00	$25.00	$125.00	$35.00	5.08
13		2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	16	0.99	2,579	Existing to remain	No Change	2	62	0	0.99	2,579	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	516	$68	$0.00	$0.00	$0.00	$0.00	-	$100.00	$25.00	$125.00	$35.00	1.33
13	Business Admin Office	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	8	0.50	1,290	Existing to remain	No Change	2	62	0	0.50	1,290	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	258	$34	$0.00	$0.00	$0.00	$0.00	-	$100.00	$25.00	$125.00	$35.00	2.66
4		2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	1	0.07	169	Existing to remain	No Change	2	65	0	0.07	169	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	34	$4	$0.00	$0.00	$0.00	$0.00	-	$100.00	$25.00	$125.00	FALSE	28.23
4	Library	2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	16	1.04	2,704	Existing to remain	No Change	2	65	0	1.04	2,704	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
15		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
16		2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	3	86	29	2.49	6,484	Existing to remain	No Change	3	86	0	2.49	6,484	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
16	Library Seminar	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	3	86	8	0.69	1,789	Existing to remain	No Change	3	86	0	0.69	1,789	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	358	$47	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	1.71
16	Library Office	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	3	86	4	0.34	894	Existing to remain	No Change	3	86	0	0.34	894	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	179	$23	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	3.41
1	Library Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	3	0.33	858	Existing to remain	No Change	4	110	0	0.33	858	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	0.5	20.0%	172	$22	$0.00	$0.00	$0.00	$0.00	-	$25.00	$25.00	$50.00	$20.00	1.33
4		2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	3	0.20	507	Existing to remain	No Change	2	65	0	0.20	507	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	0.5	20.0%	101	$13	$0.00	$0.00	$0.00	$0.00	-	$25.00	$25.00	$50.00	$20.00	2.26
16	Guidance Office Corridor	3000	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	3	86	13	1.12	3,354	Existing to remain	No Change	3	86	0	1.12	3,354	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Multi Purpose Room	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	25	2.75	7,150	Existing to remain	No Change	4	110	0	2.75	7,150	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Music Classroom	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	26	2.86	7,436	Existing to remain	No Change	4	110	0	2.86	7,436	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Boiler Room	2000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	6	0.37	744	Existing to remain	No Change	2	62	0	0.37	744	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Boiler Room Hall	3000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	4	0.25	744	Existing to remain	No Change	2	62	0	0.25	744	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Storage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	6	0.37	967	Existing to remain	No Change	2	62	0	0.37	967	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-

			EXISTING FIXTURES						PROPOSED FIXTURE RETROFIT							RETROFIT ENERGY SAVINGS			PROPOSED LIGHTING CONTROLS						LIGHTING RETROFIT COSTS					LIGHTING CONTROLS COST				
Fixture Reference #	Location	Average Burn Hours	Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Work Description	Equipment Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Energy Savings, kW	Energy Savings, kWh	Energy Savings, $	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Total Materials	Total Labor	Total All	Smart Start Incentive	Simple Payback
12	Kitchen	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Vapor Tight Lens	2	65	21	1.37	3,549	Existing to remain	No Change	2	65	0	1.37	3,549	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Kitchen Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	3	0.19	484	Existing to remain	No Change	2	62	0	0.19	484	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13	Gym-Kitchen Hallway	3000	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	8	0.50	1,488	Existing to remain	No Change	2	62	0	0.50	1,488	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
4	Womens Room	2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	1	0.07	169	Existing to remain	No Change	2	65	0	0.07	169	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
14		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Mens Room	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	1	0.11	286	Existing to remain	No Change	4	110	0	0.11	286	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
14		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
12	Boys Locker Room	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Vapor Tight Lens	2	65	11	0.72	1,859	Existing to remain	No Change	2	65	0	0.72	1,859	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
12	Girls Locker Room	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Vapor Tight Lens	2	65	15	0.98	2,535	Existing to remain	No Change	2	65	0	0.98	2,535	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
8	Gymnasium	2600	2x4, 4 Lamp, T5 54w Lo-bay, Elect. Ballast	4	236	24	5.66	14,726	Existing to remain	No Change	4	236	0	5.66	14,726	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	CST	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	8	0.88	2,288	Existing to remain	No Change	4	110	0	0.88	2,288	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	458	$60	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.59
1	Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	8	0.88	2,288	Existing to remain	No Change	4	110	0	0.88	2,288	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	458	$60	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.59
1	Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	4	0.44	1,144	Existing to remain	No Change	4	110	0	0.44	1,144	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	229	$30	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	7.17
4	Faculty Lounge	2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	8	0.52	1,352	Existing to remain	No Change	2	65	0	0.52	1,352	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	270	$35	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	2.26
13	Entrance Lobby	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
11	Main Hall Entrance	3000	4x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., White lens	4	110	5	0.55	1,650	Existing to remain	No Change	4	110	0	0.55	1,650	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Girls Locker Back Hall	3000	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	7	0.77	2,310	Existing to remain	No Change	4	110	0	0.77	2,310	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
13	Office	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to remain	No Change	2	62	0	0.25	645	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	129	$17	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	4.74
1	Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	5	0.55	1,430	Existing to remain	No Change	4	110	0	0.55	1,430	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	0.5	20.0%	286	$37	$0.00	$0.00	$0.00	$0.00	-	$25.00	$25.00	$50.00	$20.00	0.80
4		2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	2	0.13	338	Existing to remain	No Change	2	65	0	0.13	338	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	0.5	20.0%	68	$9	$0.00	$0.00	$0.00	$0.00	-	$25.00	$25.00	$50.00	FALSE	5.65
3	Storage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
10	Shop	2600	2x4, 3 Lamp, F48T12 60w, Mag. Ballast, Surface Mnt., Cage Cover	3	203.6	30	6.11	15,881	Relamp and Reballast	Sylvania Lamp:(21681) F032/841/XPS/ECO3 Ballast:QHE 3x32TRIVISNSCICCB 10/CS	3	86.2	30	2.59	6,724	3.52	9,157	$1,200	0	No New Controls	0	0.0%	0	$0	$1,950.00	$2,400.00	$4,350.00	$0.00	3.63	$0.00	$0.00	$0.00	FALSE	-
3	Home Economics	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	24	1.49	3,869	Existing to remain	No Change	2	62	0	1.49	3,869	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
4		2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	4	0.26	676	Existing to remain	No Change	2	65	0	0.26	676	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
9	Admin Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	110	2	0.22	572	Existing to remain	No Change	4	110	0	0.22	572	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	114	$15	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	14.35
9	Principal Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	110	6	0.66	1,716	Existing to remain	No Change	4	110	0	0.66	1,716	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	343	$45	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	1.78
7	Principal Lavatory	1200	60w Lamp	1	660	1	0.66	792	Relamp	PHILIPS 120V EnduraLED 12.5W A19 2700K	1	12.5	1	0.01	15	0.65	777	$102	0	No New Controls	0	0.0%	0	$0	$40.00	$20.00	$60.00	$0.00	0.59	$0.00	$0.00	$0.00	FALSE	-
2	Server Room	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Main office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	32	$4	$0.00	$0.00	$0.00	$0.00	-	$100.00	$25.00	$125.00	FALSE	29.60

			EXISTING FIXTURES						PROPOSED FIXTURE RETROFIT							RETROFIT ENERGY SAVINGS			PROPOSED LIGHTING CONTROLS						LIGHTING RETROFIT COSTS					LIGHTING CONTROLS COST				
Fixture Reference #	Location	Average Burn Hours	Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Work Description	Equipment Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Energy Savings, kW	Energy Savings, kWh	Energy Savings, $	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Total Materials	Total Labor	Total All	Smart Start Incentive	Simple Payback
9	[illegible]	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	110	8	0.88	2,288	Existing to remain	No Change	4	110	0	0.88	2,288	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	458	$60	$0.00	$0.00	$0.00	$0.00	-	$100.00	$25.00	$125.00	$35.00	1.50
9	Vice Principal Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	110	4	0.44	1,144	Existing to remain	No Change	4	110	0	0.44	1,144	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	229	$30	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	2.67
7	Vice Principal Lavatory	1200	60w Lamp	1	660	1	0.66	792	Relamp	PHILIPS 120V EnduraLED 12.5W A19 2700K	1	12.5	1	0.01	15	0.65	777	$102	0	No New Controls	0	0.0%	0	$0	$40.00	$20.00	$60.00	$0.00	0.59	$0.00	$0.00	$0.00	FALSE	-
9	Conference Room	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	110	4	0.44	1,144	Existing to remain	No Change	4	110	0	0.44	1,144	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	229	$30	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	$20.00	2.67
5	Front Hallway	3000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Coated Lens	2	62	20	1.24	3,720	Existing to remain	No Change	2	62	0	1.24	3,720	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
4		3000	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	2	0.13	390	Existing to remain	No Change	2	65	0	0.13	390	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
4	Main Entrance Lobby	2600	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	8	0.52	1,352	Existing to remain	No Change	2	65	0	0.52	1,352	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
5	Front to back hallway	3000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Coated Lens	2	62	8	0.50	1,488	Existing to remain	No Change	2	62	0	0.50	1,488	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
5	Back Hallway	3000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Coated Lens	2	62	12	0.74	2,232	Existing to remain	No Change	2	62	0	0.74	2,232	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
4		3000	2x2, 2 Lamp U-Tube, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	2	0.13	390	Existing to remain	No Change	2	65	0	0.13	390	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
8	All-Purpose Room	2600	2x4, 4 Lamp, T5 54w Lo-bay, Elect. Ballast	4	236	12	2.83	7,363	Existing to remain	No Change	4	236	0	2.83	7,363	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Stage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	10	0.62	1,612	Existing to remain	No Change	2	62	0	0.62	1,612	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Kitchen	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	23	1.43	3,708	Existing to remain	No Change	2	62	0	1.43	3,708	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Kitchen Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Kitchen Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Boiler Room	2000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	5	0.31	620	Existing to remain	No Change	2	62	0	0.31	620	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Maintenance Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	6	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	64	$8	$0.00	$0.00	$0.00	$0.00	-	$50.00	$50.00	$100.00	FALSE	11.84
3	Computer Lab	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	24	1.49	3,869	Existing to remain	No Change	2	62	0	1.49	3,869	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	774	$101	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.12
3		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1		2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	2	0.22	572	Existing to remain	No Change	4	110	0	0.22	572	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	CR 101	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 102	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to remain	No Change	2	62	0	1.12	2,902	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$76	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.83
3	CR 103	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to remain	No Change	2	62	0	1.12	2,902	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$76	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.83
3	CR 104	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 105	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 106	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 107	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 108	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 109	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
6	109 Storage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to remain	No Change	2	62	0	0.12	322	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Boys Restroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	5	0.31	806	Existing to remain	No Change	2	62	0	0.31	806	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-

			EXISTING FIXTURES						PROPOSED FIXTURE RETROFIT							RETROFIT ENERGY SAVINGS			PROPOSED LIGHTING CONTROLS						LIGHTING RETROFIT COSTS					LIGHTING CONTROLS COST				
Fixture Reference #	Location	Average Burn Hours	Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Work Description	Equipment Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Energy Savings, kW	Energy Savings, kWh	Energy Savings, $	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Total Materials	Total Labor	Total All	Smart Start Incentive	Simple Payback
3	Girls Restroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to remain	No Change	2	62	0	0.25	645	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Health Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	7	0.43	1,128	Existing to remain	No Change	2	62	0	0.43	1,128	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3		2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Health Office Lavatory	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	74	Existing to remain	No Change	2	62	0	0.06	74	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	CR 110	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to remain	No Change	2	62	0	1.12	2,902	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$76	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	2.83
7	CR 110 Lavatory	1200	60w Lamp	1	660	1	0.66	792	Relamp	PHILIPS 120V EnduraLED 12.5W A19 2700K	1	12.5	1	0.01	15	0.65	777	$102	0	No New Controls	0	0.0%	0	$0	$40.00	$20.00	$60.00	$0.00	0.59	$0.00	$0.00	$0.00	FALSE	-
3	Girls Restroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	5	0.31	806	Existing to remain	No Change	2	62	0	0.31	806	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Boys Restroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to remain	No Change	2	62	0	0.25	645	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Janitor Closet	2000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	124	Existing to remain	No Change	2	62	0	0.06	124	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	CR 111	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 112	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 113	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 114	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 115	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
2	Copy Room	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	3	0.19	484	Existing to remain	No Change	2	62	0	0.19	484	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	CR 116	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 117	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
3	CR 118	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to remain	No Change	2	62	0	0.93	2,418	0.00	0	$0	5	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	484	$63	$0.00	$0.00	$0.00	$0.00	-	$200.00	$50.00	$250.00	$35.00	3.39
1	Open CR 1	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	15	1.65	4,290	Existing to remain	No Change	4	110	0	1.65	4,290	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 2	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	19	2.09	5,434	Existing to remain	No Change	4	110	0	2.09	5,434	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 3	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	20	2.20	5,720	Existing to remain	No Change	4	110	0	2.20	5,720	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 4	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	15	1.65	4,290	Existing to remain	No Change	4	110	0	1.65	4,290	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 5	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	19	2.09	5,434	Existing to remain	No Change	4	110	0	2.09	5,434	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 6	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	19	2.09	5,434	Existing to remain	No Change	4	110	0	2.09	5,434	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Open Area Storage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	3	0.19	484	Existing to remain	No Change	2	62	0	0.19	484	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	CR 7	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	8	0.88	2,288	Existing to remain	No Change	4	110	0	0.88	2,288	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	CR 8	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	8	0.88	2,288	Existing to remain	No Change	4	110	0	0.88	2,288	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Faculty Lounge	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	9	0.99	2,574	Existing to remain	No Change	4	110	0	0.99	2,574	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Small Classroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	3	0.19	484	Existing to remain	No Change	2	62	0	0.19	484	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Custodian	2000	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	1	0.06	124	Existing to remain	No Change	2	62	0	0.06	124	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
3	Restroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	161	Existing to remain	No Change	2	62	0	0.06	161	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-

			EXISTING FIXTURES						PROPOSED FIXTURE RETROFIT							RETROFIT ENERGY SAVINGS			PROPOSED LIGHTING CONTROLS						LIGHTING RETROFIT COSTS					LIGHTING CONTROLS COST				
Fixture Reference #	Location	Average Burn Hours	Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Work Description	Equipment Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Energy Savings, kW	Energy Savings, kWh	Energy Savings, $	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Total Materials	Total Labor	Total All	Smart Start Incentive	Simple Payback
3	Restroom	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	3	0.19	484	Existing to remain	No Change	2	62	0	0.19	484	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
2	Storage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	62	4	0.25	645	Existing to remain	No Change	2	62	0	0.25	645	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open Area Walkway	3000	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	8	0.88	2,640	Existing to remain	No Change	4	110	0	0.88	2,640	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 9	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	15	1.65	4,290	Existing to remain	No Change	4	110	0	1.65	4,290	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 10	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	15	1.65	4,290	Existing to remain	No Change	4	110	0	1.65	4,290	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 11	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	14	1.54	4,004	Existing to remain	No Change	4	110	0	1.54	4,004	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 12	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	19	2.09	5,434	Existing to remain	No Change	4	110	0	2.09	5,434	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 13	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	19	2.09	5,434	Existing to remain	No Change	4	110	0	2.09	5,434	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 14	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	19	2.09	5,434	Existing to remain	No Change	4	110	0	2.09	5,434	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open CR 15	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	23	2.53	6,578	Existing to remain	No Change	4	110	0	2.53	6,578	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	CR 16	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	12	1.32	3,432	Existing to remain	No Change	4	110	0	1.32	3,432	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
1	Open Area near exit & CR 16	3000	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	110	8	0.88	2,640	Existing to remain	No Change	4	110	0	0.88	2,640	0.00	0	$0	0	No New Controls	0	0.0%	0	$0	$0.00	$0.00	$0.00	$0.00	-	$0.00	$0.00	$0.00	FALSE	-
17	Exterior	4000	250w Metal Halide Parking Lot Area Lights	1	295	6	1.77	7,080	Retrofit: Relamp & Bypass ballast	Neu-Tech NU-4293-HO	1	73	6	0.44	1,752	1.33	5,328	$698	0	No New Controls	0	0.0%	0	$0	$3,600.00	$300.00	$3,900.00	$0.00	5.59	$0.00	$0.00	$0.00	FALSE	-
	TOTAL					**1,322**	**119**	**312,034**					**39**	**112**	**295,218**	**7**	**16,816**	**$2,203**			**43**	**10**	**20,488**	**$2,684**	**$5,670**	**$2,760**	**$8,430**	**$0**	**3.8267352**	**$6,950**	**$2,150**	**$9,100**	**$1,375.00**	**$2.88**