WEST DEPTFORD TOWNSHIP
PUBLIC SCHOOL DISTRICT

WEST DEPTFORD HIGH SCHOOL

1600 CROWN POINT ROAD
WEST DEPTFORD, NJ 08093

FACILITY ENERGY REPORT

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I. HISTORIC ENERGY CONSUMPTION/COST

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

Electric Utility Provider:	Public Service Electric & Gas
Electric Utility Rate Structure:	Large Power & Lighting Service (LPLS)
Third Party Supplier:	None

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

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

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

Table 1
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: PSE&G
Rate: LPLS
Meter No: 778009841
Account # 42 006 686 02
Third Party Utility Provider: N/A
TPS Meter / Acct No: N/A

MONTH OF USE	CONSUMPTION KWH	DEMAND KW	TOTAL BILL
Dec-10	111,349	281	$16,766
Jan-11	111,387	357	$17,092
Feb-11	111,324	273	$16,827
Feb-11	103,504	300	$17,136
Mar-11	112,811	315	$18,256
Apr-11	122,118	324	$19,377
May-11	191,075	400	$29,693
Jun-11	260,032	536	$40,008
Jul-11	185,546	617	$32,148
Aug-11	185,512	501	$31,382
Sep-11	156,602	420	$27,862
Oct-11	167,036	499	$29,167
Nov-11	123,955	360	$18,222
Totals	**1,942,251**	**617 Max**	**$313,935**

AVERAGE DEMAND **399.1 KW average**

AVERAGE RATE **$0.162 $/kWh**

Figure 1
Electricity Usage Profile

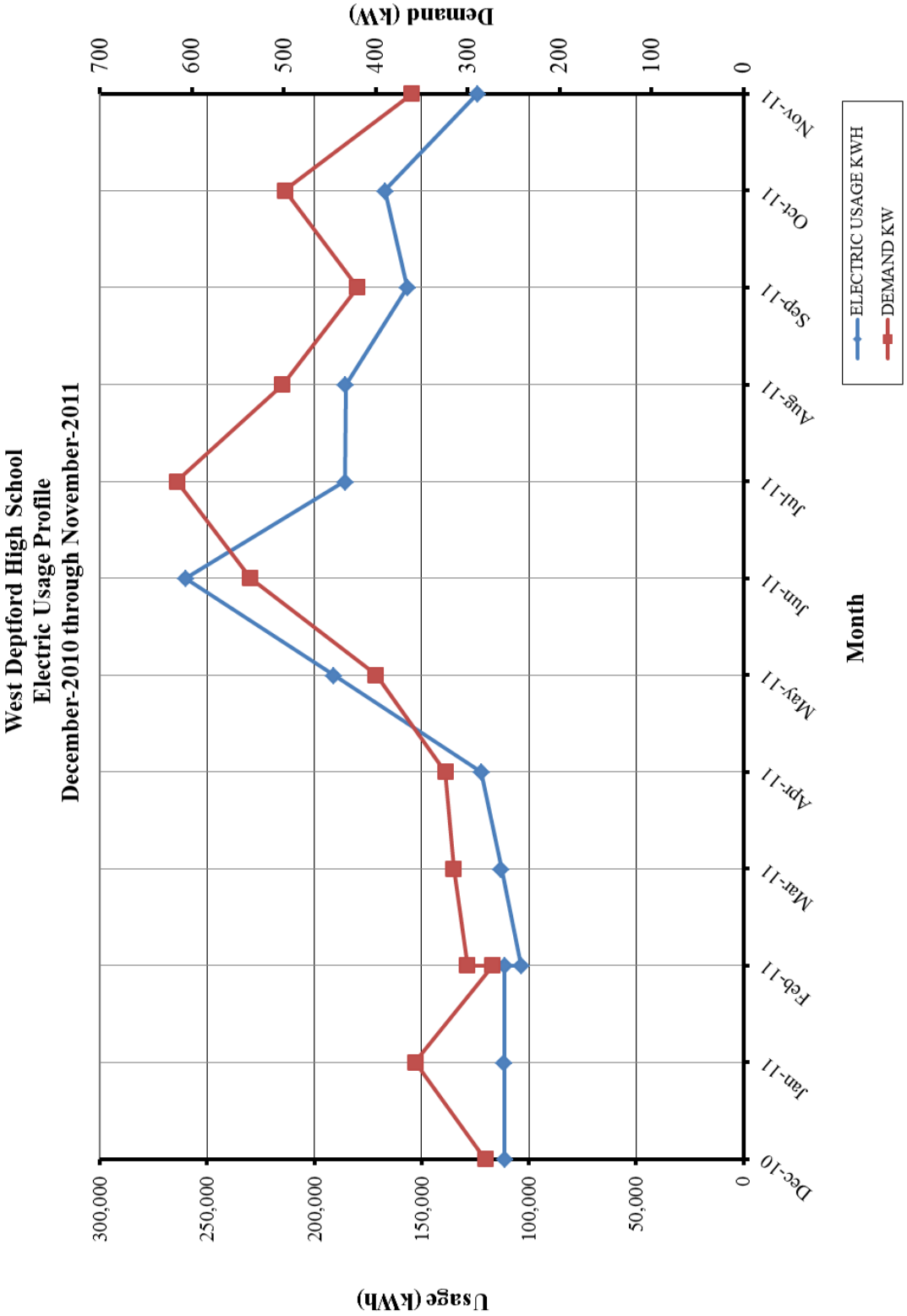
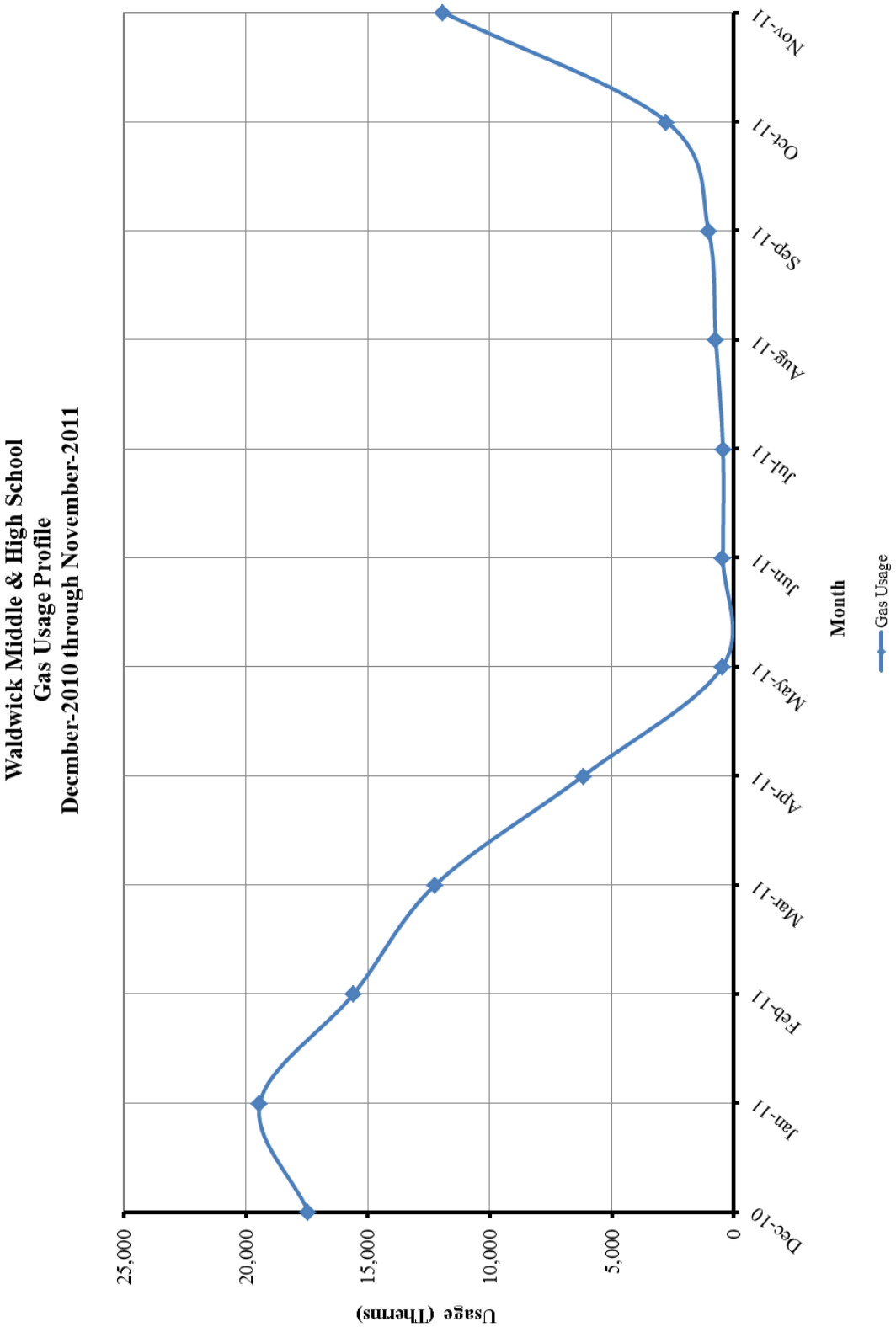


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider: PSE&G		
Rate: LVG		
Meter No: 3166077		
Account Number 67 071 830 01		
Third Party Utility Provider: Hess		
TPS Account No: PG000011042098145343		
MONTH OF USE	**CONSUMPTION (THERMS)**	**TOTAL BILL**
Nov-10	11,309	$11,613
Dec-10	17,449	$17,270
Jan-11	19,431	$18,961
Feb-11	15,580	$15,716
Mar-11	12,235	$12,777
Apr-11	6,163	$4,808
May-11	467	$572
Jun-11	451	$162
Jul-11	445	$426
Aug-11	744	$570
Sep-11	1,042	$642
Oct-11	2,773	$2,106
Nov-11	11,924	$11,762
TOTALS	**88,704**	**$85,772**
AVERAGE RATE:	**$0.97**	**$/THERM**

Figure 2
Natural Gas Usage Profile



II. FACILITY DESCRIPTION

The West Deptford High School is located on 1600 Crown Point Road in West Deptford, New Jersey. The 145,974 SF West Deptford High School was built in 1960 with a renovation in 1997. The building has two stories and is comprised of office space for administrative use, gymnasium, cafeteria, auditorium, library, classrooms, kitchen, and mechanical rooms.

Occupancy Profile

The typical hours of operation for West Deptford High School are Monday through Friday between 8:00 am and 3:00 pm, with custodial services running until 8:00 pm. There are several occurrences where outside groups will use the facility for short periods of time during the evening and weekend. The high school has a 12 month administrative occupancy of 151 people and 10 month occupancy with students of 1,018.

Building Envelope

Exterior walls for the West Deptford High School are brick faced with a concrete block construction. The amount of insulation within the walls is unknown. The windows throughout the high school are in average condition. The majority of the windows are operable with integral blinds. The roof is a flat, built up roof that appears to be in average condition. The amount of insulation below the roof is unknown. Exterior doors had air gaps ranging in size of 1/16" to 1/4" in some areas and should be addressed with either re-aligning the doors or replacing the weather stripping entirely.

Heating Plant

Heating is provided to the facility from the Mechanical Room which houses six natural gas fired, cast iron sectional hot water boilers made by Weil McLain. All six boilers have equivalent heating capacity characteristics having an input capacity of 1,674 MBH and output of 1,372 MBH for a combined output of 8,232 MBH. The boilers appear to be well maintained and in good condition. Combustion tests were not available for review but based on age the assumption is the overall fuel-to-thermal efficiency for the boilers is approximately 75%, based on radiation losses and inefficiencies in operation inherent to the older technology. All boilers are approximately 14 years old with a projected 21 years of their ASHRAE service life remaining. At this time, the boilers are not recommended for replacement. The heating hot water is circulated throughout the building via two constant speed pump set located in the Mechanical Room. The pumps are driven with standard efficiency motors that are recommended to be replaced with NEMA premium efficient motors. The hot water heating system provides heating hot water to the unit ventilators, hot water fin-tube radiators and heating and ventilation units throughout the facility.

HVAC Systems

The Video Tech and Power Shop are conditioned via packaged rooftop equipment. They are both conditioned via a cooling only direct expansion unit providing 4 tons of cooling.

The Cafeteria is conditioned via packaged rooftop equipment. The Cafeteria is conditioned via two gas-fired heating and direct expansion cooling units providing 20 tons of cooling and 300 MBH of heat each. The Cafeteria units have surpassed their ASHRAE service life and are in need of replacement.

Additionally, there are multiple split system units located throughout the facility that consist of indoor air-handling units (air handlers, unit ventilators) with hot water heating coils and direct-expansion cooling coils. Each indoor unit has an outdoor air-cooled condensing unit associated with it that is located on the roof. The majority of the units are relatively new having been installed in the last five years or so. This is typical for the classrooms in the center of the school and some other specialty rooms on the lower level that contain unit ventilators with both heating and cooling coils.

Exhaust System

Air is exhausted from the toilet rooms and other areas of the facility through the roof exhaust fans.

HVAC System Controls

The HVAC systems within the West Deptford High School are controlled by various pneumatic and electronic controls systems. The pneumatic controls are converted to electronic signals utilizing pneumatic-to-electric switches which are tied into the Barber Coleman Network 8000^{TM} control panel. There is a modem installed in the control panel that provides supervisory control and monitoring to the Facilities Director.

Domestic Hot Water

The main source of domestic hot water for West Deptford High School is Lochinvar 985 MBH gas fired water heater with a separate storage tank with a capacity of 200 gallons. The hot water heater itself is within its ASHRAE service life however, the BOE may want to review replacing the storage tank within the next few years if any leaking is noticed as the tank is approximately 14 years old. Additionally, there is a Bradford White 1.5 KW electric domestic hot water heater with an integrated 12 gallon tank serving the Guidance and library area. This unit has just recently been installed and is within its ASHRAE service life.

Lighting

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

III. MAJOR EQUIPMENT LIST

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

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

IV. ENERGY CONSERVATION MEASURES

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

Table 1
ECM Financial Summary

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST[A]**	**ANNUAL SAVINGS[B]**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
ECM #1	Lighting Upgrade	$7,988	$4,854	1.6	811.4%
ECM #2	Lighting Controls Upgrade	$24,870	$5,256	4.7	217.0%
ECM #3	NEMA Premium Motor Replacements	$6,475	$516	12.5	43.4%
ECM #4	AC Unit Upgrades	$229,812	$19,225	12.0	25.5%
ECM #5	Computer Standby or Hibernate	$3,850	$5,740	0.7	2136.4%
ECM #6	Vending Miser Controls	$600	$748	0.8	1770.0%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST**	**ANNUAL SAVINGS**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
REM #1	286.94 KW PV System	$1,821,218	$118,501	15.4	-2.4%

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

Table 2
ECM Energy Summary

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
ECM #1	Lighting Upgrade	11.6	30,146	0
ECM #2	Lighting Controls Upgrade	0	32,643	0
ECM #3	NEMA Premium Motor Replacements	0.9	3,204	0
ECM #4	AC Unit Upgrades	59.6	119,409	0
ECM #5	Computer Standby or Hibernate	0.0	35,655	0
ECM #6	Vending Miser Controls	0.0	4,646	0
RENEWABLE ENERGY MEASURES (REM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
REM #1	286.94 KW PV System	286.9	336,570	0

Table 3
Facility Project Summary

ENERGY SAVINGS IMPROVEMENT PROGRAM - POTENTIAL PROJECT					
ENERGY CONSERVATION MEASURES	**ANNUAL ENERGY SAVINGS ($)**	**PROJECT COST ($)**	**SMART START INCENTIVES**	**CUSTOMER COST**	**SIMPLE PAYBACK**
Lighting Upgrade	$4,854	$7,998	$10	$7,988	1.6
Lighting Controls Upgrade	$5,256	$27,500	$2,630	$24,870	4.7
NEMA Premium Motor Replacements	$516	$6,815	$340	$6,475	12.5
AC Unit Upgrades	$19,225	$233,600	$3,788	$229,812	12.0
Computer Standby or Hibernate	$5,740	$3,850	$0	$3,850	0.7
Vending Miser Controls	$748	$600	$0	$600	0.8
Design / Construction Extras (15%)	*$0*	*$42,054*	*$0*	*$42,054*	
Total Project	**$36,338**	**$322,417**	**$6,768**	**$315,649**	**9**

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

ECM #1: Lighting Upgrade – General

Description:

The majority of the interior lighting throughout West Deptford High School is provided with fluorescent fixtures with older generation, 700 series and 741/ECO 32W T8 lamps and electronic ballasts. Although these T8 lamps are considered fairly efficient, further energy savings can be achieved by replacing the existing T8 lamps with new generation, 800 series 28W T8 lamps without compromising light output. Concord Engineering recommends that these fixtures remain unmodified due to the extensive costs which will be incurred if these fixtures are to be re-lamped and re-ballasted, which results in a long payback period. In addition, there are a number of older and outdated fixtures with T12 lamps and magnetic ballasts. It is recommended to replace all of the T12 fixtures in these areas with higher efficiency fluorescent T8 fixtures with electronic ballasts.

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

Energy Savings Calculations:

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

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$7,998
NJ Smart Start Equipment Incentive ($):	$10
Net Installation Cost ($):	$7,988
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$4,854
Total Yearly Savings ($/Yr):	$4,854
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.6
Simple Lifetime ROI	811.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$72,803
Internal Rate of Return (IRR)	61%
Net Present Value (NPV)	$49,953.22

ECM #2: Lighting Controls Upgrade – Occupancy Sensors

Description:

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

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

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

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

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

This ECM includes installation of ceiling or switch mount sensors for individual offices, classrooms, large bathrooms, and Media Centers. 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 ($):	$27,500
NJ Smart Start Equipment Incentive ($):	$2,630
Net Installation Cost ($):	$24,870
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$5,256
Total Yearly Savings ($/Yr):	$5,256
Estimated ECM Lifetime (Yr):	15
Simple Payback	4.7
Simple Lifetime ROI	217.0%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$78,833
Internal Rate of Return (IRR)	20%
Net Present Value (NPV)	$37,870.09

ECM #3: 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 hot and cold water 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.

IMPLEMENTATION SUMMARY					
EQMT ID	**FUNCTION**	**MOTOR HP**	**HOURS OF OPERATION**	**EXISTING EFFICIENCY**	**NEMA PREMIUM EFFICIENCY**
HWP-1	Hot Water Pump	10	3,732	89.5%	92.4%
HWP-2	Hot Water Pump	7.5	3,732	85.0%	91.7%
DHWP	Domestic Hot Water Pump	1.5	2,745	84.0%	88.5%
HWC	Hot Water Circulator	1.5	2,745	78.5%	88.5%
HWC	Hot Water Circulator	1	2,745	82.5%	87.5%

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
HWP-1	10	90%	89.5%	92.4%	0.24	883	$136
HWP-2	7.5	90%	85.0%	91.7%	0.43	1,624	$250
DHWP	1.5	90%	84.0%	88.5%	0.06	168	$26
HWC	1.5	90%	78.5%	88.5%	0.14	400	$62
HWC	1	90%	82.5%	87.5%	0.05	128	$20
TOTAL					**0.9**	**3,204**	**$493**

Equipment Cost and Incentives

Below is a summary of SmartStart Building® incentives for premium efficiency motors:

INCENTIVES	
HORSE POWER	NJ SMART START INCENTIVE
1	$50
1.5	$50
2	$60
3	$60
5	$60
7.5	$90
10	$100

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

MOTOR REPLACEMENT SUMMARY						
EQMT ID	MOTOR POWER HP	INSTALLED COST	SMART START INCENTIVE	NET COST	TOTAL SAVINGS	SIMPLE PAYBACK
HWP-1	10	$2,560	$100	$2,460	$142	17.3
HWP-2	7.5	$1,971	$90	$1,881	$261	7.2
DHWP	1.5	$788	$50	$738	$27	27.2
HWC	1.5	$788	$50	$738	$64	11.5
HWC	1	$708	$50	$658	$21	31.8
TOTAL	**Totals:**	**$6,815**	**$340**	**$6,475**	**$516**	**12.6**

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$6,815
NJ Smart Start Equipment Incentive ($):	$340
Net Installation Cost ($):	$6,475
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$516
Total Yearly Savings ($/Yr):	$516
Estimated ECM Lifetime (Yr):	18
Simple Payback	12.5
Simple Lifetime ROI	43.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$9,288
Internal Rate of Return (IRR)	4%
Net Present Value (NPV)	$621.81

ECM #4: Replace Split System Units with High Efficiency Units

Description:

The West Deptford High School utilizes split system cooling only units as well as a packaged rooftop unit with gas heat to condition several spaces within the school. The unit capacities range from 4 tons 50 tons. Please refer to the **Major Equipment List Appendix** for further information about these units.

These units are in average condition though the current units in operation are not high efficiency units. These units are approximately nineteen years old and have surpassed their ASHRAE service life of fifteen years.

These units can be replaced with new higher efficiency units. New split system units provide higher full load and part load efficiencies due to advances in inverter motor technologies, heat exchangers and higher efficiency refrigerants such as R410A which would be used in place of R22 that is currently used in the units.

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

IMPLEMENTATION SUMMARY					
ECM INPUTS	**SERVICE FOR**	**NUMBER OF UNITS**	**COOLING CAPACITY, BTU/HR**	**TOTAL CAPACITY, TONS**	**REPLACE UNIT WITH**
SS	Mcquay ALP021C	1	252,000	21.0	Carrier 38AUZ
SS	Mcquay ALP016C	1	192,000	16.0	Carrier 38AUZ
SS	Trane TCC048	2	48,000	4.0	Carrier 24ANA1048
SS	Trane TTA048	4	48,000	4.0	Carrier 24ANA1048
RTU	Mcquay CUR20	2	240,000	20.0	Carrier 48HC
SS	Mcquay ALP037	1	444,000	37.0	Carrier 38APS040
SS	Mcquay ALP045	1	540,000	45.0	Carrier 38APS050
Total		**12**	**1,764,000**	**147.0**	

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

Energy Savings Calculations:

Cooling Energy Savings:

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

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

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

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

ENERGY SAVINGS CALCULATIONS							
ECM INPUTS	**COOLING CAPACITY, BTU/Hr**	**ANNUAL COOLING HOURS**	**EXISTING UNITS SEER**	**SPLIT UNITS SEER**	**# OF UNITS**	**ENERGY SAVINGS kWh**	**DEMAND SAVINGS kW**
SS	252,000	2,000	9 SEER	11 SEER	1	10,182	5.1
SS	192,000	2,001	9 SEER	11 SEER	1	7,761	3.9
SS	48,000	2,002	10 SEER	16 SEER	2	7,207	3.6
SS	48,000	2,003	10 SEER	16 SEER	4	14,422	7.2
RTU	240,000	2,004	9 SEER	12 SEER	2	26,720	13.3
SS	444,000	2,005	9 SEER	12.1 SEER	1	25,341	12.6
SS	540,000	2,006	9 SEER	11.7 SEER	1	27,775	13.8
Total					12	119,409	59.6

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$233,600
NJ Smart Start Equipment Incentive ($):	$3,788
Net Installation Cost ($):	$229,812
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$19,225
Total Yearly Savings ($/Yr):	$19,225
Estimated ECM Lifetime (Yr):	15
Simple Payback	12.0
Simple Lifetime ROI	25.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$288,375
Internal Rate of Return (IRR)	3%
Net Present Value (NPV)	($305.20)

ECM #5: Set Computers to Automatic Stand-by or Hibernate Modes

Description:

During the survey, it was noticed that the majority of the computers were left at ON position with the monitors at Screen Saver or OFF positions.

Many personal computers (PC) came equipped with automatic Sleep Mode or Hibernate (power down) mode features. Normally computers boot up from Sleep Mode or Hibernate mode much faster than powering up from Shut Down position.

Based on an independent study by the U.S. Department of Energy, Energy star® rated computers use approximately 70% less power during Sleep Mode. It is recommended to set up the PCs at this facility to switch into Sleep Mode after a short period of inactivity and Hibernate mode after a long period of inactivity.

This ECM includes configuring the computers in the classrooms and the offices such that they automatically switch into:

- Sleep Mode after 15 minutes of inactivity
- Hibernate after 60 minutes of inactivity

The inactivity times above can be adjusted based on experience or preference. Even though this ECM can be implemented easily in house, the calculations assume an independent computer technician performing the task at a typical market rate.

Energy Savings Calculations:

No. of Computers:	231
Operating Weeks per Year:	42
Estimated percentage of computers left ON overnight:	75%

$$\text{Electric Usage} = \frac{\#\text{ of Computers} \times \text{Computer Power (W)} \times \text{Operation (Hrs)}}{1000\left(\frac{\text{W}}{\text{KW}}\right)}$$

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

The cost of configuring the computers to automatically sleep or hibernate is based on 10 minutes per computer per technician at an hourly rate indicated below.

Implementation Costs: = # Computers X Configuration Time X Cost per Hour
= 231 Computers X 10 Minutes/Computer X $100 per Hour

= $3,850

AUTOMATIC SLEEP OR HIBERNATE MODES FOR COMPUTERS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	Manual Operation	Auto Power Save	-
# of Computers	231	231	-
% Computers left ON	75%	75%	-
Power when left ON (Watt)	50	50	-
Power at Stand-by (Watt)	5	5	-
Power at Hibernate (Watt)	4	4	-
Power when OFF (Watt)	0	0	-
Operating Weeks per Yr	42	42	-
Operating Hours per Week	168	168	-
Hours/Wk Computers ON	120	20	-
Hours/Wk at Sleep Mode	0	20	-
Hours/Wk at Hibernate Mode	0	80	-
Hours/Wk at Power Down	48	48	-
Elec Cost ($/kWh)	0.161	0.161	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Usage (kWh)	43,659	8,004	35,655
Energy Cost ($)	$7,029	$1,289	$5,740
COMMENTS:	Calculation assumes computers currently run throughout work week and get shut down over the weekend.		

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$3,850
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$3,850
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$5,740
Total Yearly Savings ($/Yr):	$5,740
Estimated ECM Lifetime (Yr):	15
Simple Payback	0.7
Simple Lifetime ROI	2136.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$86,100
Internal Rate of Return (IRR)	149%
Net Present Value (NPV)	$64,673.75

ECM #6: Vending Miser Controls

Description:

The West Deptford High School currently utilizes vending machines in select areas within the building. Vending machines are in different levels for the high school which can be in use for a limited time during the day. The installation of the Vending Miser system will help reduce the operating hours of vending machines.

Cold beverage machines regularly operate inefficiently trying to maintain a constant cool temperature within the machine and snack machines with no cooling usually have lights that operate 24/7. The VendingMiser® system incorporates innovative energy-saving technology into a small plug-and-play device that in conjunction with a passive infrared sensor regulate the operation of the cold beverage and snack machines based on occupancy and room temperature. This ECM approximates the installation of two (2) of these control systems, one (2) for the snack machines and one (2) for the cold beverage machines.

Energy Savings Calculations:

Savings Analysis

	Before	After	
Cold Drink Machines	$1,205.27	$621.38	Cost of Operation
	7,486	3,860	kWh
		48%	% Energy Savings
Snack Machines	$281.30	$117.21	Cost of Operation
	1,747	728	kWh
		58%	% Energy Savings

Project Summary

Present kWh	Projected kWh	kWh Savings per Year
9,233	4,588	4,646

Present Cost	Projected Costs	Annual Savings	Per Cent Savings	Total Project Cost	Break Even (Months)
$1,486.57	$738.59	$747.98	50%	$600.00	9.6

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$600
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$600
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$748
Total Yearly Savings ($/Yr):	$748
Estimated ECM Lifetime (Yr):	15
Simple Payback	0.8
Simple Lifetime ROI	1770.0%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	$11,220
Internal Rate of Return (IRR)	125%
Net Present Value (NPV)	$8,329.34

REM #1: 286.94 kW Solar System

Description:

The West Deptford High School has available roof and parking lot space that could accommodate a significant amount of solar generation. Based on the available areas a 286.94 kilowatt solar array could be installed, assuming the existing roof structure is capable of supporting an array. The array will produce approximately 336,570 kilowatt-hours annually that will reduce the overall electric usage of the facility by 16.32%.

Energy Savings Calculations:

See **Renewable / Distributed Energy Measures Calculations Appendix** for detailed financial summary and proposed solar layout areas. Financial results in table below are based on 100% financing of the system over a fifteen year period.

Energy Savings Summary:

REM #1 - ENERGY SAVINGS SUMMARY	
System Size (KW_{DC}):	286.94
Electric Generation (KWH/Yr):	336,570
Installation Cost ($):	$1,821,218
SREC Revenue ($/Yr):	$64,313
Energy Savings ($/Yr):	$54,188
Total Yearly Savings ($/Yr):	$118,501
ECM Analysis Period (Yr):	15
Simple Payback (Yrs):	15.4
Analysis Period Electric Savings ($):	$1,007,834
Analysis Period SREC Revenue ($):	$931,656
Net Present Value (NPV)	($633,132.68)

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

APPENDIX A

ECM COST & SAVINGS BREAKDOWN

CONCORD ENGINEERING GROUP

West Deptford BOE - West Deptford High 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)	$\sum_{n=0}^{N} \frac{C_n}{(1+IRR)^n}$	$\sum_{n=0}^{N} \frac{C_n}{(1+DR)^n}$
		($)	($)	($)	($)	($/Yr)	($/Yr)	($/Yr)	(Yr)	($)	($)	(%)	(Yr)	($)	($)
ECM #1	Lighting Upgrade	$4,036	$3,962	$10	$7,988	$4,854	$0	$4,854	15	$72,803	$0	811.4%	1.6	60.71%	$49,953.22
ECM #2	Lighting Controls Upgrade	$23,100	$4,400	$2,630	$24,870	$5,256	$0	$5,256	15	$78,833	$0	217.0%	4.7	19.71%	$37,870.09
ECM #3	NEMA Premium Motor Replacements	$4,364	$2,451	$340	$6,475	$516	$0	$516	18	$9,288	$0	43.4%	12.5	4.11%	$621.81
ECM #4	AC Unit Upgrades	$137,000	$96,600	$3,788	$229,812	$19,225	$0	$19,225	15	$288,375	$0	25.5%	12.0	2.98%	($305.20)
ECM #5	Computer Standby or Hibernate	$0	$3,850	$0	$3,850	$5,740	$0	$5,740	15	$86,100	$0	2136.4%	0.7	149.09%	$64,673.75
ECM #6	Vending Miser Controls	$600	$0	$0	$600	$748	$0	$748	15	$11,220	$0	1770.0%	0.8	124.66%	$8,329.34
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	286.94 KW PV System	$1,821,218	$0	$0	$1,821,218	$54,188	$64,313	$118,501	15	$1,777,517	$964,700	-2.4%	15.4	-0.30%	($406,559.29)

Notes:

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

APPENDIX B

Concord Engineering Group, Inc.

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

SmartStart Building Incentives

The NJ SmartStart Buildings Program offers financial incentives on a wide variety of building system equipment. The incentives were developed to help offset the initial cost of energy-efficient equipment. The following tables show the current available incentives as of February 15, 2011:

Electric Chillers

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

Energy Efficiency must comply with ASHRAE 90.1-2007

Gas Cooling

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

Desiccant Systems

$1.00 per cfm – gas or electric

Electric Unitary HVAC

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

Energy Efficiency must comply with ASHRAE 90.1-2007

Gas Heating

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

Ground Source Heat Pumps

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

Energy Efficiency must comply with ASHRAE 90.1-2007

Variable Frequency Drives

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

Natural Gas Water Heating

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

Prescriptive Lighting

Retro fit of T12 to T-5 or T-8 Lamps w/Electronic Ballast in Existing Facilities	\$10 per fixture (1-4 lamps)
Replacement of T12 with new T-5 or T-8 Lamps w/Electronic Ballast in Existing Facilities	\$25 per fixture (1-4 lamps)
Replacement of incandescent with screw-in PAR 38 or PAR 30 (CFL) bulb	\$7 per bulb
T-8 reduced Wattage (28w/25w 4', 1-4 lamps) Lamp & ballast replacement	\$10 per fixture
Hard-Wired Compact Fluorescent	\$25 - \$30 per fixture
Metal Halide w/Pulse Start Including Parking Lot	\$25 per fixture
T-5 and T-8 High Bay Fixtures	\$16 - \$200 per fixture
HID ≥ 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	\$50 per fixture
HID ≥ 100w Replacement with new HID ≥ 100w	\$70 per fixture

Prescriptive Lighting - LED

LED New Exit Sign Fixture Existing Facility < 75 kw Existing Facility > 75 kw	 $20 per fixture $10 per fixture
LED Display Case Lighting	$30 per display case
LED Shelf-Mtd. Display & Task Lights	$15 per linear foot
LED Portable Desk Lamp	$20 per fixture
LED Wall-wash Lights	$30 per fixture
LED Recessed Down Lights	$35 per fixture
LED Outdoor Pole/Arm-Mounted Area and Roadway Luminaries	$175 per fixture
LED Outdoor Pole/Arm-Mounted Decorative Luminaries	$175 per fixture
LED Outdoor Wall-Mounted Area Luminaries	$100 per fixture
LED Parking Garage Luminaries	$100 per fixture
LED Track or Mono-Point Directional Lighting Fixtures	$50 per fixture
LED High-Bay and Low-Bay Fixtures for Commercial & Industrial Bldgs.	$150 per fixture
LED High-Bay-Aisle Lighting	$150 per fixture
LED Bollard Fixtures	$50 per fixture
LED Linear Panels (2x2 Troffers only)	$100 per fixture
LED Fuel Pump Canopy	$100 per fixture
LED Refrigerator/Freezer case lighting replacement of fluorescent in medium and low temperature display case	$42 per 5 foot $65 per 6 foot

Lighting Controls – Occupancy Sensors

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

Lighting Controls – HID or Fluorescent Hi-Bay Controls

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

Premium Motors

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

Other Equipment Incentives

Performance Lighting	$1.00 per watt per SF below program incentive threshold, currently 5% more energy efficient than ASHRAE 90.1-2007 for New Construction and Complete Renovation
Custom Electric and Gas Equipment Incentives	not prescriptive
Custom Measures	$0.16 KWh and $1.60/Therm of 1st year savings, or a buy down to a 1 year payback on estimated savings. Minimum required savings of 75,000 KWh or 1,500 Therms and a IRR of at least 10%.
Multi Measures Bonus	15%

APPENDIX C

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
West Deptford School District - High School

Building ID: 3278779
For 12-month Period Ending: November 30, 2011[1]
Date SEP becomes ineligible: N/A
Date SEP Generated: October 19, 2012

Facility
West Deptford School District - High School
1600 Crown Point Road
West Deptford, NJ 08093

Facility Owner
West Deptford Township Public School District
675 Grove Road
West Deptford, NJ 08066

Primary Contact for this Facility
William Thompson
675 Grove Road
West Deptford, NJ 08066

Year Built: 1960
Gross Floor Area (ft²): 145,974

Energy Performance Rating[2] (1-100) 22

Site Energy Use Summary[3]

Electricity - Grid Purchase(kBtu)	6,273,805
Natural Gas (kBtu)[4]	8,870,400
Total Energy (kBtu)	15,144,205

Energy Intensity[4]

Site (kBtu/ft²/yr)	104
Source (kBtu/ft²/yr)	207

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	1,360

Electric Distribution Utility
Public Service Electric & Gas Co

National Median Comparison

National Median Site EUI	80
National Median Source EUI	160
% Difference from National Median Source EUI	30%
Building Type	K-12 School

Stamp of Certifying Professional

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

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

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

Certifying Professional
Michael Fischette
520 South Burnt Mill Road
Voorhees, NJ 08043

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

ENERGY STAR® Data Checklist for Commercial Buildings

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

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

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Building Name	West Deptford School District - High School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	K-12 School	Is this an accurate description of the space in question?		☐
Location	1600 Crown Point Road, West Deptford, NJ 08093	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of a hospital, k-12 school, hotel and senior care facility) nor can they be submitted as representing only a portion of a building.		☐
West Deptford High School (K-12 School)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑
Gross Floor Area	145,974 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		☐
Open Weekends?	Yes	Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days.		☐
Number of PCs	231	Is this the number of personal computers in the K12 School?		☐
Number of walk-in refrigeration/freezer units	2	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		☐
Presence of cooking facilities	Yes	Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".		☐
Percent Cooled	60 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Months	10(Optional)	Is this school in operation for at least 8 months of the year?		☐

High School?	Yes	Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'.		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

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

Fuel Type: Electricity

Meter: electric (kWh (thousand Watt-hours))
Space(s): Entire Facility
Generation Method: Grid Purchase

Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
11/01/2011	11/30/2011	123,955.00
10/01/2011	10/31/2011	167,036.00
09/01/2011	09/30/2011	156,602.00
08/01/2011	08/31/2011	185,512.00
07/01/2011	07/31/2011	185,546.00
06/01/2011	06/30/2011	260,032.00
05/01/2011	05/31/2011	191,075.00
04/01/2011	04/30/2011	122,118.00
03/01/2011	03/31/2011	112,811.00
02/01/2011	02/28/2011	111,324.00
01/01/2011	01/31/2011	111,387.00
12/01/2010	12/31/2010	111,349.00
electric Consumption (kWh (thousand Watt-hours))		**1,838,747.00**
electric Consumption (kBtu (thousand Btu))		**6,273,804.76**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		**6,273,804.76**
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐

Fuel Type: Natural Gas

Meter: gas (therms)
Space(s): Entire Facility

Start Date	End Date	Energy Use (therms)
11/01/2011	11/30/2011	11,924.00
10/01/2011	10/31/2011	2,773.00
09/01/2011	09/30/2011	1,042.00
08/01/2011	08/31/2011	744.00
07/01/2011	07/31/2011	445.00
06/01/2011	06/30/2011	451.00
05/01/2011	05/31/2011	467.00
04/01/2011	04/30/2011	6,163.00
03/01/2011	03/31/2011	12,235.00
02/01/2011	02/28/2011	15,580.00

01/01/2011	01/31/2011	19,431.00
12/01/2010	12/31/2010	17,449.00
gas Consumption (therms)		**88,704.00**
gas Consumption (kBtu (thousand Btu))		**8,870,400.00**
Total Natural Gas Consumption (kBtu (thousand Btu))		**8,870,400.00**
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		☐

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

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

Certifying Professional

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

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

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

Facility
West Deptford School District - High School
1600 Crown Point Road
West Deptford, NJ 08093

Facility Owner
West Deptford Township Public School District
675 Grove Road
West Deptford, NJ 08066

Primary Contact for this Facility
William Thompson
675 Grove Road
West Deptford, NJ 08066

General Information

West Deptford School District - High School	
Gross Floor Area Excluding Parking: (ft^2)	145,974
Year Built	1960
For 12-month Evaluation Period Ending Date:	November 30, 2011

Facility Space Use Summary

West Deptford High School	
Space Type	K-12 School
Gross Floor Area (ft^2)	145,974
Open Weekends?	Yes
Number of PCs	231
Number of walk-in refrigeration/freezer units	2
Presence of cooking facilities	Yes
Percent Cooled	60
Percent Heated	100
Months °	10
High School?	Yes
School District °	West Deptford

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 11/30/2011)	**Baseline** (Ending Date 11/30/2011)	**Rating of 75**	**Target**	**National Median**
Energy Performance Rating	22	22	75	N/A	50
Energy Intensity					
Site ($kBtu/ft^2$)	104	104	63	N/A	80
Source ($kBtu/ft^2$)	207	207	125	N/A	160
Energy Cost					
$/year	N/A	N/A	N/A	N/A	N/A
$/$ft^2$/year	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions					
$MtCO_2e$/year	1,360	1,360	821	N/A	1,050
$kgCO_2e/ft^2$/year	9	9	5	N/A	7

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

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

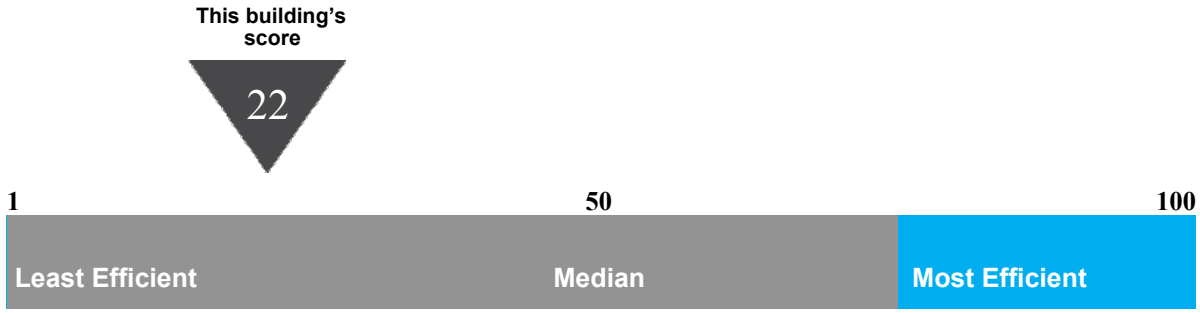
Statement of Energy Performance

2011

West Deptford School District - High School
1600 Crown Point Road
West Deptford, NJ 08093

Portfolio Manager Building ID: 3278779

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



This building uses 207 kBtu per square foot per year.*

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

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

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

Date of certification

EPA United States Environmental Protection Agency

Date Generated: 10/19/2012

APPENDIX D

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford High School

AC Units

Tag			
Unit Type	Air Cooled Condensing Unit	Air Cooled Condensing Unit	Split System Heat Pump
Qty	1	1	1
Location	Parapet Area above Library	Parapet Area above Library	Roof
Area Served	LGI/ Guidance	LGI/ Guidance	L-2
Manufacturer	McQuay	McQuay	LG
Model #	ALP021C	ALP016C	LSU305HV
Serial #	5YC05025-02	5Y005024-02	3091879
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	21 Tons	16 Tons	26400 BTUH
Cooling Efficiency (SEER/EER)	9 EER	9 EER	10 SEER
Heating Type	N/A	N/A	Heat Pump
Heating Input (MBH)	N/A	N/A	28300 BTUH
Efficiency	N/A	N/A	-
Fuel	N/A	N/A	Electric Heat Pump
Approx Age	19	19	9
ASHRAE Service Life	15	15	15
Remaining Life	(4)	(4)	6
Comments			

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

AC Units

Tag			
Unit Type	Split System Heat Pump	Packaged Cooling Units	Split System Air Conditioning
Qty	1	2	4
Location	Roof	Roof	Roof
Area Served	Tech Area	Video Tech / Power Shop	20B / 20A / 18
Manufacturer	Sanyo	Trane	Trane
Model #	CH0922	TCC048F400BC	TTA048C400AO
Serial #	0009332	N255N2X2H	N241MSKBF
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	9000 BTUH	4 Tons	4 Tons
Cooling Efficiency (SEER/EER)	10 SEER	9.25 EER / 10 SEER	9.25 EER / 10 SEER
Heating Type	Heat Pump	N/A	N/A
Heating Input (MBH)	10900 BTUH	N/A	N/A
Efficiency	6.8 HSPF	N/A	N/A
Fuel	Electric Heat Pump	N/A	N/A
Approx Age	9	14	14
ASHRAE Service Life	15	15	15
Remaining Life	6	1	1
Comments			

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

AC Units

Tag			
Unit Type	Packaged Rooftop Unit	Split System AC	Split System AC
Qty	2	1	3
Location	Roof	Roof	Roof
Area Served	Cafeteria	Classroom 210	Prep Office / Gym Offices
Manufacturer	McQuay	Goodman	LG
Model #	CUR201ETLC	CL042-1B	LAU120SHV
Serial #	5YE83771-01	0602664024	102KAQJ00524
Cooling Type	DX, R-22	DX, R-22	DX, R-410A
Cooling Capacity (Tons)	20 Tons	3.5 Tons	11,200 BTUH
Cooling Efficiency (SEER/EER)	9 EER	10 SEER	12.5 EER / 20 SEER
Heating Type	Natural Gas	N/A	Heat Pump
Heating Input (MBH)	300	N/A	13,300 BTUH
Efficiency	80%	N/A	-
Fuel	Natural Gas	N/A	Heat Pump
Approx Age	19	6	2
ASHRAE Service Life	15	15	15
Remaining Life	(4)	9	13
Comments			

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

AC Units

Tag			
Unit Type	Split System AC	Split System AC	Split System AC
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	211	206 / 3B	Nurse's Office
Manufacturer	Thermal Zone	Thermal Zone	Coleman
Model #	TZAA-348-2A757	TZAA-342-2A757	TCGD36S2152A
Serial #	8346W471005360	8345W201111252	W058904513
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	4 Tons	3.5 Tons	3 Tons
Cooling Efficiency (SEER/EER)	11.5 EER / 13 SEER	11.5 EER / 13 SEER	13 SEER
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	2	2	7
ASHRAE Service Life	15	15	15
Remaining Life	13	13	8
Comments			

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

AC Units

Tag			
Unit Type	Split System AC	Split System AC	Split System AC
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	2A	2C	2B
Manufacturer	York	McQuay	International Comfort Products
Model #	HABD-W048SB	ALP037C	CAE120LAA
Serial #	W0K8297750	5YC05027-00	G081920095
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	4 Tons	37 Tons	10 Tons
Cooling Efficiency (SEER/EER)	10 SEER	9 EER	10 EER
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	4	19	4
ASHRAE Service Life	15	15	15
Remaining Life	11	(4)	11
Comments			

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

AC Units

Tag			
Unit Type	Split System AC	Split System AC	Split System AC
Qty	1	2	1
Location	Roof	Roof	Roof
Area Served	Auditorium	Auditorium	Graphic Arts
Manufacturer	McQuay	McQuay	Trane
Model #	ALP045C	ACZ039B5527-ER10	TTA-090
Serial #	5YB01888-00	STNU080700141	-
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	45 Tons	39 Tons	7.5 Tons
Cooling Efficiency (SEER/EER)	9 EER	10 EER	10.3 EER
Heating Type	N/A	N/A	N/A
Heating Input (MBH)	N/A	N/A	N/A
Efficiency	N/A	N/A	N/A
Fuel	N/A	N/A	N/A
Approx Age	19	4	5
ASHRAE Service Life	15	15	15
Remaining Life	(4)	11	10
Comments			

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

AC Units

Tag		
Unit Type	Split System AC	Packaged AC
Qty	1	1
Location	On Grade outside library	Roof Parapet
Area Served	Library	Weight Room
Manufacturer	Trane	McQuay
Model #	RACC-0156-A	ALP
Serial #	080H-04826	-
Cooling Type	DX, R-22	DX, R-22
Cooling Capacity (Tons)	-	-
Cooling Efficiency (SEER/EER)	9 EER	10 SEER
Heating Type	N/A	N/A
Heating Input (MBH)	N/A	N/A
Efficiency	N/A	N/A
Fuel	N/A	N/A
Approx Age	4	19
ASHRAE Service Life	15	15
Remaining Life	11	(4)
Comments		

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford High School

Boilers

Tag			
Unit Type	Cast Iron Sectional Boilers		
Qty	6		
Location	Boiler Room		
Area Served	Hot Water Loop		
Manufacturer	Weil Mclain		
Model #	BG-1278-W		
Serial #	-		
Input Capacity (Btu/Hr)	1,674		
Rated Output Capacity (Btu/Hr)	1,372		
Approx. Efficiency %	75.0%		
Fuel	Natural Gas		
Approx Age	14		
ASHRAE Service Life	35		
Remaining Life	21		
Comments	Power Flame Burner M/N: WCR2-G-15 SN:59884739		

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford High School

Domestic Water Heaters

Tag			
Unit Type	Domestic Hot Water Storage	Cast Iron Sectional Boiler	Electric Domestic Hot Water Heater
Qty	1	1	1
Location	Boiler Room	Boiler Room	Janitor Closet
Area Served	Storage for Lochinvar DHW Boiler	Domestic Hot Water Loop	Guidance/Library Area
Manufacturer	Lochinvar	Lochinvar Boiler	Bradford White
Model #	RGA0432	CWN0985PM	MII2V16SS
Serial #	G983909	D988105	GD13221897
Size (Gallons)	200	Lochinvar DHW Storage	12
Input Capacity (MBH/KW)	N/A	985	1.5 KW
Recovery (Gal/Hr)	N/A	-	-
Efficiency %	N/A	80%	98%
Fuel	N/A	Natural Gas	Electric
Approx Age	N/A	14	2
ASHRAE Service Life	N/A	24	12
Remaining Life	N/A	10	10
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford High School

Pumps

Tag			
Unit Type	Base Mounted End Suction Pumps	Base Mounted End Suction Pumps	Base Mounted End Suction Pumps
Qty	2	1	2
Location	Boiler Room	Boiler Room	Boiler Room
Area Served	Hot Water Loop	DHW Loop	Hot Water Loop
Manufacturer	B&G	Armstrong	B&G
Model #	58 G 8 BF	HQM56B17D11009A	-
Serial #	453748	-	-
Horse Power	10 / 7.5 HP	1 1/2	1.5 / 1 HP
Flow	400 GPM @ 56 FTHD	N/A	-
Motor Info	Marathon / Baldor	Leland Faraday Motor	Baldor
Electrical Power	208-230/460/3/60	208-220/440/3/60	230/460/3/60
RPM	1760	1725	1750
Motor Efficiency %	89.5 / 85%	84.0%	78.5 / 82.5%
Approx Age	14	14	14
ASHRAE Service Life	18	18	18
Remaining Life	4	4	4
Comments			

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

APPENDIX E

CEG Project #: 9C12051
Facility Name: West Deptford High School
Address: 1600 Old Crown Point Rd.
City, State, Zip West Deptford, NJ 08093

			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
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, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $
8	Classroom 22	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	16	0.99	2,579	Existing to Remain	Existing to Remain	2	62	0	0.99	2,579	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	516	$83
8	Prep	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	3	0.19	484	Existing to Remain	Existing to Remain	2	62	0	0.19	484	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	97	$16
8	Classroom 20B	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	16	0.99	2,579	Existing to Remain	Existing to Remain	2	62	0	0.99	2,579	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	516	$83
8	Prep	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to Remain	Existing to Remain	2	62	0	0.25	645	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	129	$21
8	Classroom 20A	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to Remain	Existing to Remain	2	62	0	1.12	2,902	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$93
8	Classroom 18	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	20	1.24	3,224	Existing to Remain	Existing to Remain	2	62	0	1.24	3,224	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	645	$104
8	Prep	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to Remain	Existing to Remain	2	62	0	0.25	645	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	129	$21
16	Video Tech	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	15	1.29	3,354	Existing to Remain	Existing to Remain	3	86	0	1.29	3,354	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	671	$108
16	Sound Room	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	3	0.26	671	Existing to Remain	Existing to Remain	3	86	0	0.26	671	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	134	$22
18	Office	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	3	0.32	835	Existing to Remain	Existing to Remain	4	107	0	0.32	835	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	167	$27
10	Auto Shop	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	32	1.98	5,158	Existing to Remain	Existing to Remain	2	62	0	1.98	5,158	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Wood Shop	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	30	1.86	4,836	Existing to Remain	Existing to Remain	2	62	0	1.86	4,836	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Graphics	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	15	0.93	2,418	Existing to Remain	Existing to Remain	2	62	0	0.93	2,418	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
8	Classroom 16	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	16	0.99	2,579	Existing to Remain	Existing to Remain	2	62	0	0.99	2,579	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	516	$83
8	Classroom 14	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 12	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 10	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 8	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 6	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 4	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	16	0.99	2,579	Existing to Remain	Existing to Remain	2	62	0	0.99	2,579	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	516	$83
9	Men's Restroom	1200	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	4	0.25	298	Existing to Remain	Existing to Remain	2	62	0	0.25	298	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
9	Women's Restroom	1200	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	4	0.25	298	Existing to Remain	Existing to Remain	2	62	0	0.25	298	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Custodial Closet	4000	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	2	0.12	496	Existing to Remain	Existing to Remain	2	62	0	0.12	496	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
6	CST	2600	1x4, 1 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	1	33	8	0.26	686	Existing to Remain	Existing to Remain	1	33	0	0.26	686	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	137	$22
21	CST	2600	Recessed Down light, (2)26WQuad CFL Lamp	2	52	8	0.42	1,082	Existing to Remain	Existing to Remain	2	52	0	0.42	1,082	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	216	$35

			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
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, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $
21	Display Cases	3000	Recessed Down light, (2)26WQuad CFL Lamp	2	52	7	0.36	1,092	Existing to Remain	Existing to Remain	2	52	0	0.36	1,092	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
4	Guidance Lobby	2600	4x4, 8 Lamp 32W, T8, Elect. Ballast, Recessed Mnt., White Diffuser	4	208	14	2.91	7,571	Existing to Remain	Existing to Remain	4	208	0	2.91	7,571	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
6	Guidance Lobby	2600	1x4, 1 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	1	33	10	0.33	858	Existing to Remain	Existing to Remain	1	33	0	0.33	858	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
4	Guidance Reception	2600	4x4, 8 Lamp 32W, T8, Elect. Ballast, Recessed Mnt., White Diffuser	4	208	5	1.04	2,704	Existing to Remain	Existing to Remain	4	208	0	1.04	2,704	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
21	Guidance Reception	2600	Recessed Down light, (2)26WQuad CFL Lamp	2	52	3	0.16	406	Existing to Remain	Existing to Remain	2	52	0	0.16	406	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
16	Guidance Reception	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	1	0.09	224	Existing to Remain	Existing to Remain	3	86	0	0.09	224	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
16	CST OFFice	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	6	0.52	1,342	Existing to Remain	Existing to Remain	3	86	0	0.52	1,342	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	268	$43
16	Guidance Side Offices (6)	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	18	1.55	4,025	Existing to Remain	Existing to Remain	3	86	0	1.55	4,025	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	805	$130
9	Guidance Hall / Commons	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	3	0.19	484	Existing to Remain	Existing to Remain	2	62	0	0.19	484	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
12	Guidance Hall / Commons	2600	2x4, 2 Lamp, 32W, 700 Series, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to Remain	Existing to Remain	2	62	0	0.25	645	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
21	Conference Room	2600	Recessed Down light, (2)26WQuad CFL Lamp	2	52	8	0.42	1,082	Existing to Remain	Existing to Remain	2	52	0	0.42	1,082	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	216	$35
6	Conference Room	2600	1x4, 1 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	1	33	8	0.26	686	Existing to Remain	Existing to Remain	1	33	0	0.26	686	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	137	$22
12	Files	2600	2x4, 2 Lamp, 32W, 700 Series, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	8	0.50	1,290	Existing to Remain	Existing to Remain	2	62	0	0.50	1,290	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	258	$42
19	LGI	2600	2x4, 4 Lamp, 32W, T8, elect. Ballast, Recessed Mnt., Parabolic Lens	4	104	20	2.08	5,408	Existing to Remain	Existing to Remain	4	104	0	2.08	5,408	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	1,082	$174
5	LGI Storage	600	1x4, 2 Lamp, 34W, T12, Mag. Ballast, Surface Mnt., No Lens	2	78	1	0.08	47	Reballast & Relamp	Sylvania F028/835/XP/XL/SS/ECO3 - QUE2x32T8/UNV/ISL-SC	2	49	1	0.05	29	0.03	17	$3	$56.00	$48.00	$104.00	$10.00	33.554651	0	No New Controls	0	0.0%	0	$0
18	Library	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	27	2.89	7,511	Existing to Remain	Existing to Remain	4	107	0	2.89	7,511	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
18	L2	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	4	0.43	1,113	Existing to Remain	Existing to Remain	4	107	0	0.43	1,113	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
8	Classroom 5	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 7	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 9	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 11	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 13	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
17	Girl's Restroom	1200	2x4, 4 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	107	2	0.21	257	Existing to Remain	Existing to Remain	4	107	0	0.21	257	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
17	Boy's Restroom	1200	2x4, 4 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	107	2	0.21	257	Existing to Remain	Existing to Remain	4	107	0	0.21	257	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Custodial Closet	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	1	0.06	37	Existing to Remain	Existing to Remain	2	62	0	0.06	37	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
8	Cafeteria	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	66	4.09	10,639	Existing to Remain	Existing to Remain	2	62	0	4.09	10,639	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0

			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
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, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $
10	Kitchen	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	36	2.23	5,803	Existing to Remain	Existing to Remain	2	62	0	2.23	5,803	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Wash Area	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	4	0.25	645	Existing to Remain	Existing to Remain	2	62	0	0.25	645	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
22	Kitchen Hood	2600	Hood light w/ Globe & Cage, 100W A Lamp	1	100	6	0.60	1,560	Relamp	18W CFL Lamp	1	18	6	0.11	281	0.49	1,279	$206	$36.00	$162.00	$198.00	$0.00	0.9613928	0	No New Controls	0	0.0%	0	$0
8	Lockers	3000	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	372	Existing to Remain	Existing to Remain	2	62	0	0.12	372	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
18	Lounge	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	4	0.43	1,113	Existing to Remain	Existing to Remain	4	107	0	0.43	1,113	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	223	$36
10	Lounge B	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	6	0.37	967	Existing to Remain	Existing to Remain	2	62	0	0.37	967	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	193	$31
8	Classroom 15	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	18	1.12	2,902	Existing to Remain	Existing to Remain	2	62	0	1.12	2,902	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	580	$93
17	Classroom 17	2600	2x4, 4 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	4	107	7	0.75	1,947	Existing to Remain	Existing to Remain	4	107	0	0.75	1,947	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	389	$63
15	Classroom 19	2600	1x4, 3 Lamp, 32W, T8, Elec. Ballast, Surface Mnt, Parabolic Lens	3	86.2	15	1.29	3,362	Existing to Remain	Existing to Remain	3	86.2	0	1.29	3,362	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	672	$108
8	Receiving	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	7	0.43	260	Existing to Remain	Existing to Remain	2	62	0	0.43	260	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
8	Electrical Room	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	1	0.06	37	Existing to Remain	Existing to Remain	2	62	0	0.06	37	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Boiler Room	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	12	0.74	446	Existing to Remain	Existing to Remain	2	62	0	0.74	446	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
16	Custodial Office	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	2	0.17	447	Existing to Remain	Existing to Remain	3	86	0	0.17	447	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	89	$14
10	Girl's Locker Room	1200	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	16	0.99	1,190	Existing to Remain	Existing to Remain	2	62	0	0.99	1,190	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
23	Girl's Locker Room	1200	2', 2 Lamp, 17w, T8, Elec. Ballast	2	33	7	0.23	277	Existing to Remain	Existing to Remain	2	33	0	0.23	277	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Gym Storage	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	10	0.62	372	Existing to Remain	Existing to Remain	2	62	0	0.62	372	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
20	Gym	2600	1x4, 3 Lamp, 54w T5HO, Pendant Mnt, No Lens	3	177	24	4.25	11,045	Existing to Remain	Existing to Remain	3	177	0	4.25	11,045	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Boy's Locker Room	1200	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	16	0.99	1,190	Existing to Remain	Existing to Remain	2	62	0	0.99	1,190	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
23	Boy's Locker Room	1200	2', 2 Lamp, 17w, T8, Elec. Ballast	2	33	7	0.23	277	Existing to Remain	Existing to Remain	2	33	0	0.23	277	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
18	Weight Room	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	23	2.46	6,399	Existing to Remain	Existing to Remain	4	107	0	2.46	6,399	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,280	$206
6	Men's Restroom	1200	1x4, 1 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	1	33	6	0.20	238	Existing to Remain	Existing to Remain	1	33	0	0.20	238	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
16	PE Office	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	6	0.52	1,342	Existing to Remain	Existing to Remain	3	86	0	0.52	1,342	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	268	$43
16	Classroom 23	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	12	1.03	2,683	Existing to Remain	Existing to Remain	3	86	0	1.03	2,683	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	537	$86
16	Classroom 21	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	12	1.03	2,683	Existing to Remain	Existing to Remain	3	86	0	1.03	2,683	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	537	$86
18	Athletic Office	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	8	0.86	2,226	Existing to Remain	Existing to Remain	4	107	0	0.86	2,226	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	445	$72
8	Aux Gym	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	68	4.22	10,962	Existing to Remain	Existing to Remain	2	62	0	4.22	10,962	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0

			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
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, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $
8	Classroom 24	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
18	Classroom 25A	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	4	0.43	1,113	Existing to Remain	Existing to Remain	4	107	0	0.43	1,113	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	223	$36
8	Classroom 25A	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 26	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 27	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 28	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
10	Custodial Closet	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	2	0.12	74	Existing to Remain	Existing to Remain	2	62	0	0.12	74	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
8	Classroom 30	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 29	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 31	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 32	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
18	Special Education	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	6	0.64	1,669	Existing to Remain	Existing to Remain	4	107	0	0.64	1,669	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	334	$54
16	Conference Room	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	2	0.17	447	Existing to Remain	Existing to Remain	3	86	0	0.17	447	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	89	$14
10	Custodial Closet	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	1	0.06	37	Existing to Remain	Existing to Remain	2	62	0	0.06	37	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
14	Men's Restroom	1200	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Surface Mnt, Prismatic Lens	3	86	2	0.17	206	Existing to Remain	Existing to Remain	3	86	0	0.17	206	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
14	Women's Restroom	1200	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Surface Mnt, Prismatic Lens	3	86	2	0.17	206	Existing to Remain	Existing to Remain	3	86	0	0.17	206	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
16	Classroom 2C	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	9	0.77	2,012	Existing to Remain	Existing to Remain	3	86	0	0.77	2,012	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	402	$65
16	Classroom 2B	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	6	0.52	1,342	Existing to Remain	Existing to Remain	3	86	0	0.52	1,342	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	268	$43
16	Classroom 2A	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	9	0.77	2,012	Existing to Remain	Existing to Remain	3	86	0	0.77	2,012	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	402	$65
18	Band	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	16	1.71	4,451	Existing to Remain	Existing to Remain	4	107	0	1.71	4,451	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	890	$143
18	Band Offices (4)	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	8	0.86	2,226	Existing to Remain	Existing to Remain	4	107	0	0.86	2,226	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	4	20.0%	445	$72
24	Stage	2600	1x4, 2 Lamp, T12, Magnetic Ballast, Pendant Mnt, No Lens	2	78	24	1.87	4,867	Reballast & Relamp	Sylvania F028/835/XP/XL/SS/ECO3 - QUE2x32T8/UNV/ISL-SC	2	49	24	1.18	3,058	0.70	1,810	$291	$1,344.00	$1,152.00	$2,496.00	$0.00	8.567145	0	No New Controls	0	0.0%	0	$0
10	Stage	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
25	Auditorium	2600	Recessed Auditorium Light, 300w A Lamp Incandescent	1	300	52	15.60	40,560	Relamp	100w CFL Lamp	1	100	52	5.20	13,520	10.40	27,040	$4,353	$2,600.00	$2,600.00	$5,200.00	$0.00	1.1944577	0	No New Controls	0	0.0%	0	$0
8	Electrical Room	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	74	Existing to Remain	Existing to Remain	2	62	0	0.12	74	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
16	Office	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	4	0.34	894	Existing to Remain	Existing to Remain	3	86	0	0.34	894	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	179	$29

			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
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, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $
16	Classroom 3	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	22	1.89	4,919	Existing to Remain	Existing to Remain	3	86	0	1.89	4,919	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	984	$158
18	Classroom 3A	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	6	0.64	1,669	Existing to Remain	Existing to Remain	4	107	0	0.64	1,669	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	334	$54
18	Faculty Room	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	4	0.43	1,113	Existing to Remain	Existing to Remain	4	107	0	0.43	1,113	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	223	$36
13	Faculty Room	2600	2x2, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	3	0.20	507	Existing to Remain	Existing to Remain	2	65	0	0.20	507	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	101	$16
13	Stairwell (2)	3000	2x2, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	8	0.52	1,560	Existing to Remain	Existing to Remain	2	65	0	0.52	1,560	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
8	Classroom 201	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 202	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 204	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 203	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 206	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 205	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 207	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 208	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 209	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 210	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 211	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
8	Classroom 212	2600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	12	0.74	1,934	Existing to Remain	Existing to Remain	2	62	0	0.74	1,934	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	387	$62
18	Social Studies Office	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	3	0.32	835	Existing to Remain	Existing to Remain	4	107	0	0.32	835	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	167	$27
11	Men's Restroom	1200	2x4, 2 Lamp, 32W, 700 Series, T8, Elec. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	149	Existing to Remain	Existing to Remain	2	62	0	0.12	149	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
11	Women's Restroom	1200	2x4, 2 Lamp, 32W, 700 Series, T8, Elec. Ballast, Surface Mnt., Prismatic Lens	2	62	2	0.12	149	Existing to Remain	Existing to Remain	2	62	0	0.12	149	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
10	Custodial Closet	600	1x4, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	1	0.06	37	Existing to Remain	Existing to Remain	2	62	0	0.06	37	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
13	Girl's Restroom	1200	2x2, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	1	0.07	78	Existing to Remain	Existing to Remain	2	65	0	0.07	78	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
13	Boy's Restroom	1200	2x2, 2 Lamp, 32W, 700 Series, T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	65	1	0.07	78	Existing to Remain	Existing to Remain	2	65	0	0.07	78	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
18	English Office	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	3	0.32	835	Existing to Remain	Existing to Remain	4	107	0	0.32	835	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	167	$27
16	Nurse	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	6	0.52	1,342	Existing to Remain	Existing to Remain	3	86	0	0.52	1,342	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	268	$43
18	Nurse	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	5	0.54	1,391	Existing to Remain	Existing to Remain	4	107	0	0.54	1,391	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	0.5	20.0%	278	$45

			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
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, $	Material	Total Labor	Total All	Rebate Estimate	Simple Payback	Control Ref #	Controls Description	Qty of Controls	Hour Reduction %	Energy Savings, kWh	Energy Savings, $
6	Conference Room	2600	1x4, 1 Lamp, 32W, 700 Series, T8, Elect. Ballast, Surface Mnt., Prismatic Lens	1	33	8	0.26	686	Existing to Remain	Existing to Remain	1	33	0	0.26	686	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	137	$22
21	Conference Room	2600	Recessed Down light, (2)26WQuad CFL Lamp	2	52	8	0.42	1,082	Existing to Remain	Existing to Remain	2	52	0	0.42	1,082	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	216	$35
18	Attendance Office	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	8	0.86	2,226	Existing to Remain	Existing to Remain	4	107	0	0.86	2,226	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	445	$72
18	Main Office	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	11	1.18	3,060	Existing to Remain	Existing to Remain	4	107	0	1.18	3,060	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	612	$99
18	Side Offices (2)	2600	2x4, 4 Lamp, 32W, 700 Series, T8, elect. Ballast, Recessed Mnt., Prismatic Lens	4	107	8	0.86	2,226	Existing to Remain	Existing to Remain	4	107	0	0.86	2,226	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	2	20.0%	445	$72
16	Copy Room	2600	2x4, 3 Lamp, 32W, T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	3	86	2	0.17	447	Existing to Remain	Existing to Remain	3	86	0	0.17	447	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	89	$14
	TOTAL					**1,435**	**117**	**295,249**					**83**	**106**	**265,103**	**12**	**30,146**	**4,854**	**4,036**	**3,962**	**7,998**	**10**				**88**	**17**	**32,643**	**5,256**

APPENDIX F

Location Description	Area (Sq FT)	Panel	Qty	Panel Sq Ft	Panel Total Sq Ft	Total KW_{DC}	Total Annual kWh	Total KW_{AC}	Panel Weight (41.9 lbs)	W/SQFT
West Deptford HS	18835	SHARP NU-U235F2	1221	17.5	21,417	286.94	336,570	232.4	51,160	13.40

.= Proposed PV Roof Layout .= Proposed PV Parking Lot Layout

Notes:

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

Project Name: **LGEA Solar PV Project - West Deptford HS**
Location: **West Deptford, NJ**
Description: **Photovoltaic System 100% Financing - 15 year**

Simple Payback Analysis

	Photovoltaic System 100% Financing - 15 year
Total Construction Cost	$1,821,218
Annual kWh Production	336,570
Annual Energy Cost Reduction	$54,188
Average Annual SREC Revenue	$64,313

Simple Payback: **15.37** Years

Life Cycle Cost Analysis

Analysis Period (years): 15
Discount Rate: 3%
Average Energy Cost ($/kWh) **$0.161**
Financing Rate: 6.00%
Financing %: 100%
Maintenance Escalation Rate: 3.0%
Energy Cost Escalation Rate: 3.0%
Average SREC Value ($/kWh) $0.191

Period	Additional Cash Outlay	Energy kWh Production	Energy Cost Savings	Additional Maint Costs	SREC Revenue	Interest Expense	Loan Principal	Net Cash Flow	Cumulative Cash Flow
0	$0	0	0	0	$0	0	0	0	0
1	$0	336,570	$54,188	$0	$84,143	$107,172	$77,250	($46,091)	($46,091)
2	$0	334,887	$55,813	$0	$83,722	$102,407	$82,015	($44,886)	($90,978)
3	$0	333,213	$57,488	$0	$83,303	$97,349	$87,073	($43,631)	($134,608)
4	$0	331,547	$59,212	$0	$82,887	$91,978	$92,444	($42,323)	($176,931)
5	$0	329,889	$60,989	$3,398	$82,472	$86,276	$98,145	($44,358)	($221,289)
6	$0	328,239	$62,818	$3,381	$65,648	$80,223	$104,199	($59,336)	($280,626)
7	$0	326,598	$64,703	$3,364	$65,320	$73,796	$110,625	($57,763)	($338,389)
8	$0	324,965	$66,644	$3,347	$64,993	$66,973	$117,449	($56,132)	($394,520)
9	$0	323,340	$68,643	$3,330	$64,668	$59,729	$124,693	($54,441)	($448,961)
10	$0	321,724	$70,703	$3,314	$48,259	$52,038	$132,383	($68,774)	($517,735)
11	$0	320,115	$72,824	$3,297	$48,017	$43,873	$140,548	($66,878)	($584,612)
12	$0	318,515	$75,009	$3,281	$47,777	$35,205	$149,217	($64,917)	($649,529)
13	$0	316,922	$77,259	$3,264	$47,538	$26,001	$158,420	($62,889)	($712,418)
14	$0	315,337	$79,577	$3,248	$31,534	$16,230	$168,192	($76,559)	($788,977)
15	$0	313,761	$81,964	$3,232	$31,376	$5,856	$178,565	($74,313)	($863,291)
	Totals:	4,875,622	$1,007,834	$36,456	$931,656	$945,107	$1,821,218	($863,291)	($6,248,955)

Net Present Value (NPV) **($633,133)**