WEST DEPTFORD TOWNSHIP
PUBLIC SCHOOL DISTRICT

WEST DEPTFORD MIDDLE SCHOOL

675 GROVE ROAD
WEST DEPTFORD, NJ 08066

FACILITY ENERGY REPORT

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I. HISTORIC ENERGY CONSUMPTION/COST

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

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

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

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

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

Table 1
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: PSE&G
Rate: LPLS
Meter No: 778013895
Account # 42 008 041 07
Third Party Utility Provider: South Jersey Energy
TPS Meter / Acct No: -

MONTH OF USE	CONSUMPTION KWH	DEMAND KW	TOTAL BILL
Dec-10	102,080	320	$15,021
Jan-11	105,280	294	$15,140
Feb-11	107,680	299	$15,463
Mar-11	104,960	347	$15,273
Apr-11	116,320	456	$15,936
May-11	164,640	589	$22,205
Jun-11	169,120	602	$27,688
Jul-11	176,000	432	$26,595
Aug-11	129,440	347	$20,075
Sep-11	159,200	502	$25,490
Oct-11	112,640	429	$15,454
Nov-11	110,080	392	$15,071
Totals	**1,557,440**	**602 Max**	**$229,409**

AVERAGE DEMAND **418.0 KW average**
AVERAGE RATE **$0.147 $/kWh**

Figure 1
Electricity Usage Profile

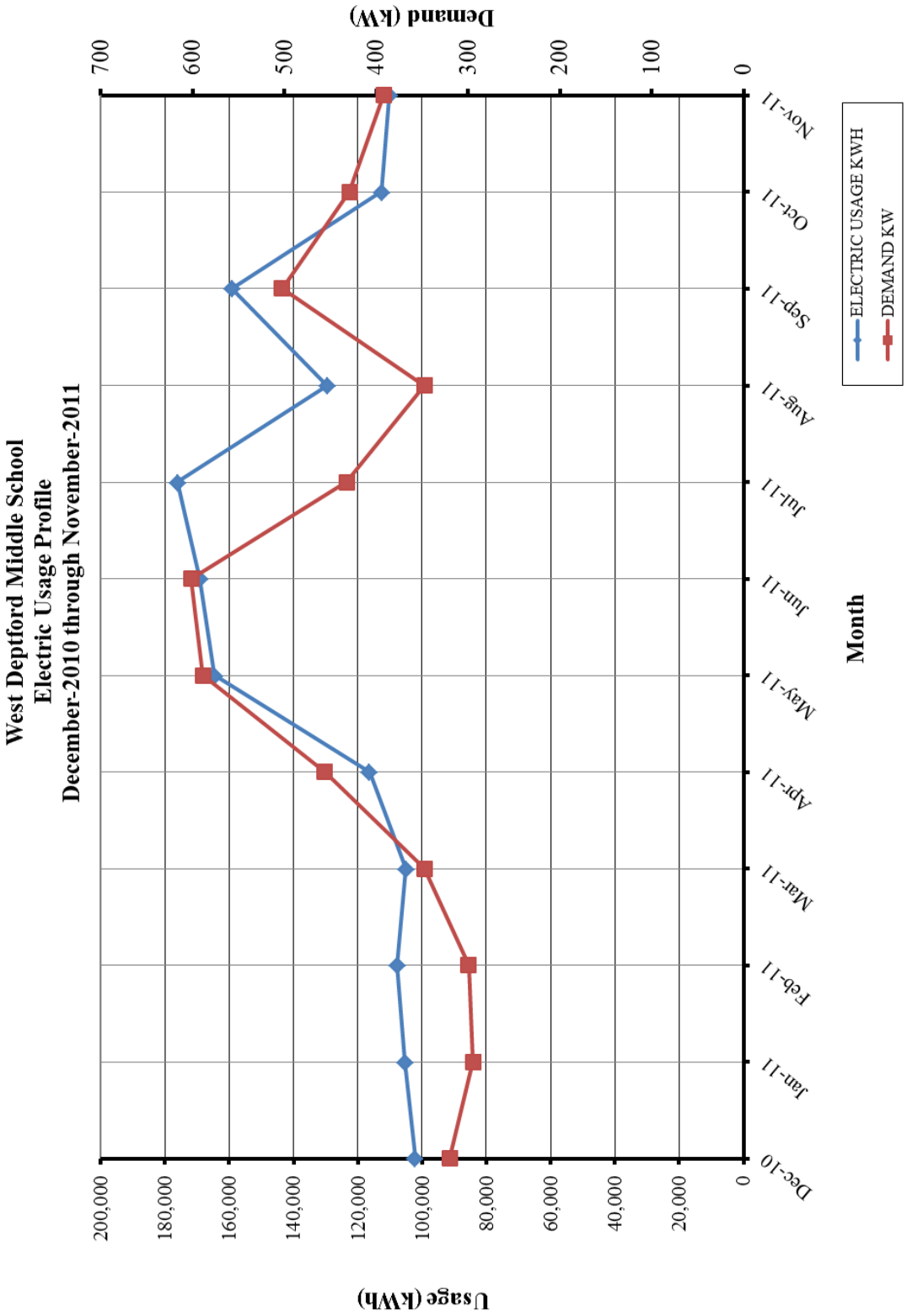
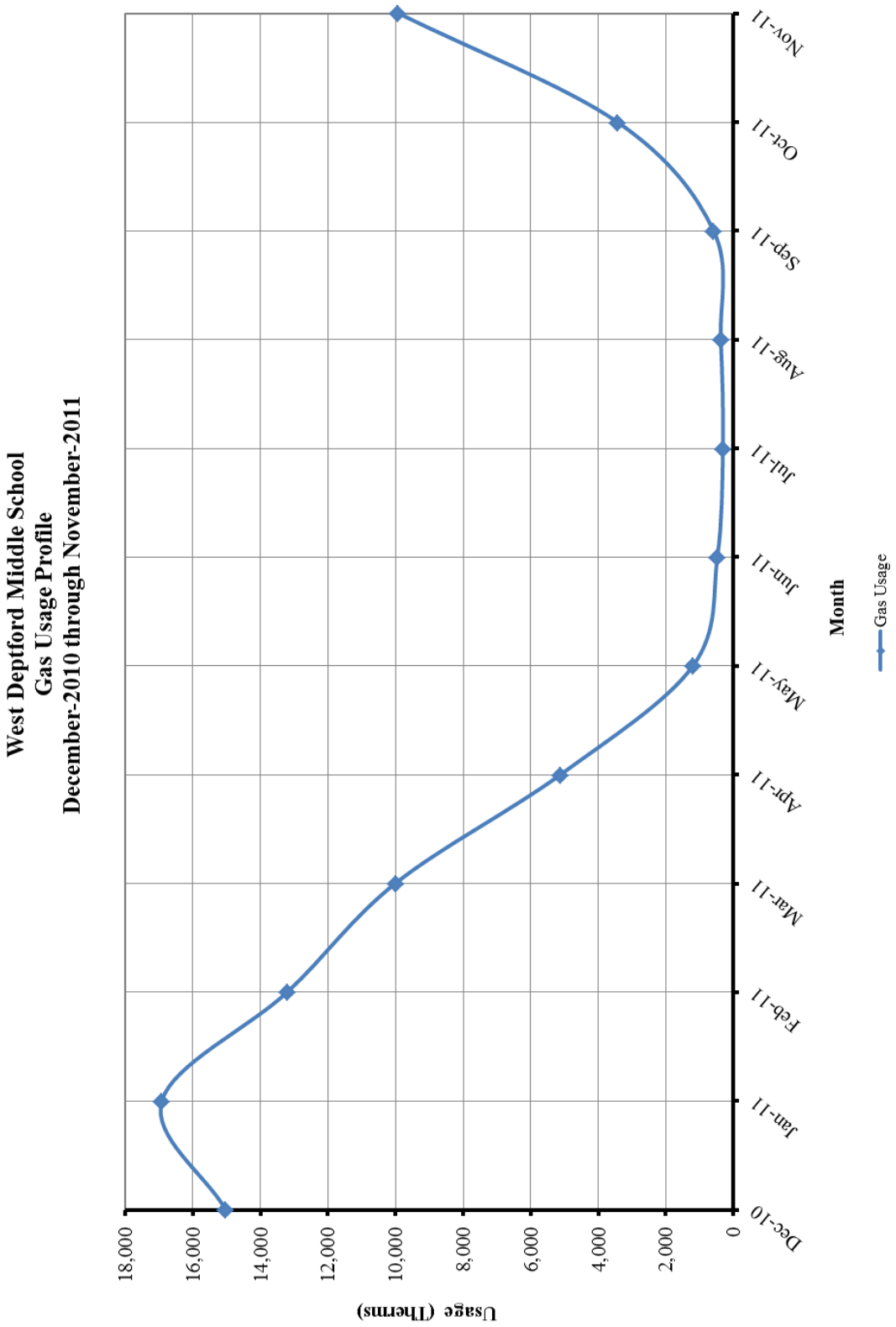


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider: PSE&G		
Rate: LVG		
Meter No: 2643855		
Account Number 42 008 041 07		
Third Party Utility Provider: Hess		
TPS Account No: PG00008850844545343		
MONTH OF USE	**CONSUMPTION (THERMS)**	**TOTAL BILL**
Nov-10	9,095	$9,357
Dec-10	15,030	$14,531
Jan-11	16,921	$16,000
Feb-11	13,207	$12,930
Mar-11	10,006	$10,285
Apr-11	5,118	$3,841
May-11	1,199	$972
Jun-11	478	$166
Jul-11	314	$330
Aug-11	376	$378
Sep-11	591	$505
Oct-11	3,442	$2,309
Nov-11	9,927	$9,617
TOTALS	**76,609**	**$71,864**
AVERAGE RATE:	**$0.94**	**$/THERM**

Figure 2
Natural Gas Usage Profile



II. FACILITY DESCRIPTION

The West Deptford Middle School is located at 675 Grove Road in West Deptford, New Jersey. The 120,064 SF West Deptford Middle School was built in 1972. The building is a single-story structure and consists of office space for board of education and middle school administrative use, gymnasium, cafetorium, media center, classrooms, kitchen and mechanical rooms.

Occupancy Profile

The typical hours of operation for West Deptford Middle School are Monday through Friday between 7:30 am and 4:30 pm, with custodial services running until 11:30 pm. The middle school has a 12 month administrative occupancy of 154 people and 10 month occupancy with students of 1,054.

Building Envelope

Exterior walls for the West Deptford Middle School are brick faced with a concrete block construction. The amount of insulation within the walls is unknown. The windows throughout the middle 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 housing 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 1,527 MBH and output of 1,250 MBH for a combined output of 7,500 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 one 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 majority of the common areas including locker rooms, tech closets, library, band rooms, guidance, middle school offices, kitchen, faculty room, cafeteria and gymnasium are conditioned by Nesbitt packaged rooftop units. The Nesbitt rooftops serving the locker rooms do not have

cooling sections in them; therefore they are only providing natural gas heat to these areas. The remaining units have direct expansion coils which range in capacity from 22 tons to 30 tons.

Several small offices in each of the wings are conditioned by split system air conditioning units manufactured by Carrier, Thermal Zone, LG and Trane.

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 Greenfields Elementary 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™ 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 Middle School is Lochinvar 500 MBH gas fired water heater with a separate storage tank with a capacity of 318 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.

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	$2,116	$442	4.8	213.5%
ECM #2	Lighting Controls Upgrade	$27,865	$8,013	3.5	331.4%
ECM #3	NEMA Premium Motor Replacements	$2,918	$401	7.3	147.4%
ECM #4	Computer Standby or Hibernate	$15,550	$21,169	0.7	1942.1%
ECM #5	Rooftop Unit Replacements	$854,000	$35,961	23.7	-36.8%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST**	**ANNUAL SAVINGS**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
REM #1	272.13 KW PV System	$1,618,875	$108,972	14.9	1.0%
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	2.5	3,009	0
ECM #2	Lighting Controls Upgrade	0	54,511	0
ECM #3	NEMA Premium Motor Replacements	0.7	2,607	0
ECM #4	Computer Standby or Hibernate	0.0	144,009	0
ECM #5	Rooftop Unit Replacements	106.0	244,635	0
RENEWABLE ENERGY MEASURES (REM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
REM #1	272.13 KW PV System	272.1	322,321	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	$442	$2,116	$0	$2,116	4.8
Lighting Controls Upgrade	$8,013	$30,650	$2,785	$27,865	3.5
NEMA Premium Motor Replacements	$401	$3,038	$120	$2,918	7.3
Computer Standby or Hibernate	$21,169	$15,550	$0	$15,550	0.7
Rooftop Unit Replacements	$35,961	$854,000	$0	$854,000	23.7
Design / Construction Extras (15%)	*$0*	*$135,803*	*$0*	*$135,803*	
Total Project	**$65,987**	**$1,041,157**	**$2,905**	**$1,038,252**	**16**

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 Middle 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 ($):	$2,116
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$2,116
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$442
Total Yearly Savings ($/Yr):	$442
Estimated ECM Lifetime (Yr):	15
Simple Payback	4.8
Simple Lifetime ROI	213.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$6,634
Internal Rate of Return (IRR)	19%
Net Present Value (NPV)	$3,163.90

ECM #2: Lighting Controls Upgrade – Occupancy Sensors

Description:

Some of the lights in the West Deptford Middle 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:

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

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

Rebates and Incentives:

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

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

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$30,650
NJ Smart Start Equipment Incentive ($):	$2,785
Net Installation Cost ($):	$27,865
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$8,013
Total Yearly Savings ($/Yr):	$8,013
Estimated ECM Lifetime (Yr):	15
Simple Payback	3.5
Simple Lifetime ROI	331.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$120,197
Internal Rate of Return (IRR)	28%
Net Present Value (NPV)	$67,795.31

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 water pumps are candidates for replament 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	5	3,732	82.5%	90.2%
HWP-2	Hot Water Pump	5	3,732	82.5%	90.2%

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	5	90%	82.5%	90.2%	0.35	1,303	$201
HWP-2	5	90%	82.5%	90.2%	0.35	1,303	$201
TOTAL					**0.7**	**2,607**	**$401**

Equipment Cost and Incentives

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

INCENTIVES	
HORSE POWER	NJ SMART START INCENTIVE
5	$60
7.5	$90
10	$100
15	$115
20	$125
25	$130
30	$150
40	$180

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	5	$1,519	$60	$1,459	$201	7.3
HWP-2	5	$1,519	$60	$1,459	$201	7.3
TOTAL	**Totals:**	**$3,038**	**$120**	**$2,918**	**$401**	**7.3**

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$3,038
NJ Smart Start Equipment Incentive ($):	$120
Net Installation Cost ($):	$2,918
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$401
Total Yearly Savings ($/Yr):	$401
Estimated ECM Lifetime (Yr):	18
Simple Payback	7.3
Simple Lifetime ROI	147.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$7,218
Internal Rate of Return (IRR)	12%
Net Present Value (NPV)	$2,597.16

ECM #4: 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:	933
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
= 933 Computers X 10 Minutes/Computer X $100 per Hour

= $15,550

AUTOMATIC SLEEP OR HIBERNATE MODES FOR COMPUTERS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	Manual Operation	Auto Power Save	-
# of Computers	933	933	-
% 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 ($/kWh)	0.147	0.147	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Usage (kWh)	176,337	32,328	144,009
Energy Cost ($)	$25,922	$4,752	$21,169
COMMENTS:	Calculation assumes computers currently run throughout work week and get shut down over the weekend.		

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$15,550
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$15,550
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$21,169
Total Yearly Savings ($/Yr):	$21,169
Estimated ECM Lifetime (Yr):	15
Simple Payback	0.7
Simple Lifetime ROI	1942.1%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$317,539
Internal Rate of Return (IRR)	136%
Net Present Value (NPV)	$237,167.21

ECM #5: Replace Rooftop Units

Description:

The West Deptford Middle School utilizes mostly packaged rooftop units with gas heat to condition spaces within the school. The unit capacities range from 22 tons 30 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 sixteen years old and have surpassed their ASHRAE service life of fifteen years.

These units can be replaced with new higher efficiency units. New rooftop 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 units with new higher efficiency systems. It is recommended to fully evaluate the capacity needed for all new systems prior to moving forward with this ECM. A summary of the unit 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**
RTU	Library	1	288,000	24.0	Nesbitt Packaged Rooftop
RTU	Middle School Offices	1	264,000	22.0	Nesbitt Packaged Rooftop
RTU	Band Rooms	1	288,000	24.0	Nesbitt Packaged Rooftop
RTU	Kitchen	1	360,000	30.0	Nesbitt Packaged Rooftop
RTU	Cafeteria	1	264,000	22.0	Nesbitt Packaged Rooftop
RTU	Faculty	1	360,000	30.0	Nesbitt Packaged Rooftop
RTU	Gymnasium	1	288,000	24.0	Nesbitt Packaged Rooftop
RTU	Gymnasium	1	288,000	24.0	Nesbitt Packaged Rooftop
RTU	Guidance	1	264,000	22.0	Nesbitt Packaged Rooftop
RTU	Tech Areas	1	288,000	24.0	Nesbitt Packaged Rooftop
Total		**10**	**2,952,000.0**	**246.0**	

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

Energy Savings Calculations:

Cooling Energy Savings:

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

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

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

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

ENERGY SAVINGS CALCULATIONS											
ECM INPUTS	**COOLING CAPACITY, BTU/Hr**	**ANNUAL COOLING HOURS**	**EXISTING UNITS EER**	**SPLIT UNITS EER**	**# OF UNITS**	**Economizer Savings kW**	**Economizer Savings kWh**	**DEMAND SAVINGS kW**	**ENERGY SAVINGS kWh**	**Total Demand Savings kW**	**Total Energy Savings kWh**
RTU	288,000	2,000	8 EER	11 EER	1	1.3	5,791	9.8	19,636	11.1	25,428
RTU	264,000	2,000	8 EER	11 EER	1	1.2	5,309	9.0	18,000	10.2	23,309
RTU	288,000	2,000	8 EER	11 EER	1	1.3	5,791	9.8	19,636	11.1	25,428
RTU	360,000	2,000	8 EER	11 EER	1	1.6	7,239	12.3	24,545	13.9	31,785
RTU	264,000	2,000	8 EER	11 EER	1	1.2	5,309	9.0	18,000	10.2	23,309
RTU	360,000	2,000	8 EER	11 EER	1	1.6	7,239	12.3	24,545	13.9	31,785
RTU	288,000	2,000	9 EER	11 EER	1	1.3	5,791	5.8	11,636	7.1	17,428
RTU	288,000	2,000	9 EER	11 EER	1	1.3	5,791	5.8	11,636	7.1	17,428
RTU	264,000	2,000	8 EER	11 EER	1	1.2	5,309	9.0	18,000	10.2	23,309
RTU	288,000	2,000	8 EER	11 EER	1	1.3	5,791	9.8	19,636	11.1	25,428
Total					10	13.4	59,362	92.6	185,273	106.0	244,635

COST & SAVINGS SUMMARY							
ECM INPUTS	**INSTALLED COST**	**# OF UNITS**	**TOTAL COST**	**REBATES**	**NET COST**	**ENERGY SAVING**	**PAY BACK YEARS**
RTU	$85,000	1	$85,000	$0	$85,000	$3,738	22.7
RTU	$78,000	1	$78,000	$0	$78,000	$3,426	22.8
RTU	$80,000	1	$80,000	$0	$80,000	$3,738	21.4
RTU	$100,000	1	$100,000	$0	$100,000	$4,672	21.4
RTU	$78,000	1	$78,000	$0	$78,000	$3,426	22.8
RTU	$100,000	1	$100,000	$0	$100,000	$4,672	21.4
RTU	$85,000	1	$85,000	$0	$85,000	$2,562	33.2
RTU	$85,000	1	$85,000	$0	$85,000	$2,562	33.2
RTU	$78,000	1	$78,000	$0	$78,000	$3,426	22.8
RTU	$85,000	1	$85,000	$0	$85,000	$3,738	22.7
Total	$854,000	10	$854,000	$0	$854,000	$35,961	23.7

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$854,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$854,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$35,961
Total Yearly Savings ($/Yr):	$35,961
Estimated ECM Lifetime (Yr):	15
Simple Payback	23.7
Simple Lifetime ROI	-36.8%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$539,420
Internal Rate of Return (IRR)	-5%
Net Present Value (NPV)	($424,696.21)

REM #1: 272.13 kW Solar System

Description:

The West Deptford Middle School has available roof and parking lot space that could accommodate a significant amount of solar generation. Based on the available areas a 272.3 kilowatt solar array could be installed, assuming the existing roof structure is capable of supporting an array. The array will produce approximately 322,321 kilowatt-hours annually that will reduce the overall electric usage of the facility by 20.7%.

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}):	272.13
Electric Generation (KWH/Yr):	322,321
Installation Cost ($):	$1,618,875
SREC Revenue ($/Yr):	$61,591
Energy Savings ($/Yr):	$47,381
Total Yearly Savings ($/Yr):	$108,972
ECM Analysis Period (Yr):	15
Simple Payback (Yrs):	14.9
Analysis Period Electric Savings ($):	$881,239
Analysis Period SREC Revenue ($):	$892,214
Net Present Value (NPV)	($525,564.04)

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 Middle 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	$865	$1,251	$0	$2,116	$442	$0	$442	15	$6,634	$0	213.5%	4.8	19.45%	$3,163.90
ECM #2	Lighting Controls Upgrade	$25,500	$5,150	$2,785	$27,865	$8,013	$0	$8,013	15	$120,197	$0	331.4%	3.5	28.05%	$67,795.31
ECM #3	NEMA Premium Motor Replacements	$1,898	$1,140	$120	$2,918	$401	$0	$401	18	$7,218	$0	147.4%	7.3	11.94%	$2,597.16
ECM #4	Computer Standby or Hibernate	$0	$15,550	$0	$15,550	$21,169	$0	$21,169	15	$317,539	$0	1942.1%	0.7	136.14%	$237,167.21
ECM #5	Rooftop Unit Replacements	$750,000	$104,000	$0	$854,000	$35,961	$0	$35,961	15	$539,420	$0	-36.8%	23.7	-5.26%	($424,696.21)
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	272.13 KW PV System	$1,618,875	$0	$0	$1,618,875	$47,381	$61,591	$108,972	15	$1,634,576	$923,859	1.0%	14.9	0.12%	($317,977.53)

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 - Middle School

Building ID: 3278784
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 - Middle School
675 Grove Road
West Deptford, NJ 08066

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: 1972
Gross Floor Area (ft²): 120,064

Energy Performance Rating[2] (1-100) 51

Site Energy Use Summary[3]

Electricity - Grid Purchase(kBtu)	5,313,985
Natural Gas (kBtu)[4]	7,660,900
Total Energy (kBtu)	12,974,885

Energy Intensity[4]

Site (kBtu/ft²/yr)	108
Source (kBtu/ft²/yr)	215

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	1,160

Electric Distribution Utility
Public Service Electric & Gas Co

National Median Comparison

National Median Site EUI	109
National Median Source EUI	217
% Difference from National Median Source EUI	-1%
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 - Middle 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	675 Grove Road, West Deptford, NJ 08066	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 Middle School (K-12 School)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑
Gross Floor Area	120,064 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	933	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	90 %	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?	No	Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'.		☐

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	110,080.00
10/01/2011	10/31/2011	112,640.00
09/01/2011	09/30/2011	159,200.00
08/01/2011	08/31/2011	129,440.00
07/01/2011	07/31/2011	176,000.00
06/01/2011	06/30/2011	169,120.00
05/01/2011	05/31/2011	164,640.00
04/01/2011	04/30/2011	116,320.00
03/01/2011	03/31/2011	104,960.00
02/01/2011	02/28/2011	107,680.00
01/01/2011	01/31/2011	105,280.00
12/01/2010	12/31/2010	102,080.00
electric Consumption (kWh (thousand Watt-hours))		**1,557,440.00**
electric Consumption (kBtu (thousand Btu))		**5,313,985.28**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		**5,313,985.28**
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	9,927.00
10/01/2011	10/31/2011	3,442.00
09/01/2011	09/30/2011	591.00
08/01/2011	08/31/2011	376.00
07/01/2011	07/31/2011	314.00
06/01/2011	06/30/2011	478.00
05/01/2011	05/31/2011	1,199.00
04/01/2011	04/30/2011	5,118.00
03/01/2011	03/31/2011	10,006.00
02/01/2011	02/28/2011	13,207.00

01/01/2011	01/31/2011	16,921.00
12/01/2010	12/31/2010	15,030.00
gas Consumption (therms)		**76,609.00**
gas Consumption (kBtu (thousand Btu))		**7,660,900.00**
Total Natural Gas Consumption (kBtu (thousand Btu))		**7,660,900.00**
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 - Middle School
675 Grove Road
West Deptford, NJ 08066

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 - Middle School	
Gross Floor Area Excluding Parking: (ft^2)	120,064
Year Built	1972
For 12-month Evaluation Period Ending Date:	November 30, 2011

Facility Space Use Summary

West Deptford Middle School	
Space Type	K-12 School
Gross Floor Area (ft^2)	120,064
Open Weekends?	Yes
Number of PCs	933
Number of walk-in refrigeration/freezer units	2
Presence of cooking facilities	Yes
Percent Cooled	90
Percent Heated	100
Months °	10
High School?	No
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	51	51	75	N/A	50
Energy Intensity					
Site (kBtu/ft^2)	108	108	85	N/A	109
Source (kBtu/ft^2)	215	215	169	N/A	217
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	1,160	1,160	916	N/A	1,171
$kgCO_2e/ft^2$/year	10	10	8	N/A	10

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.

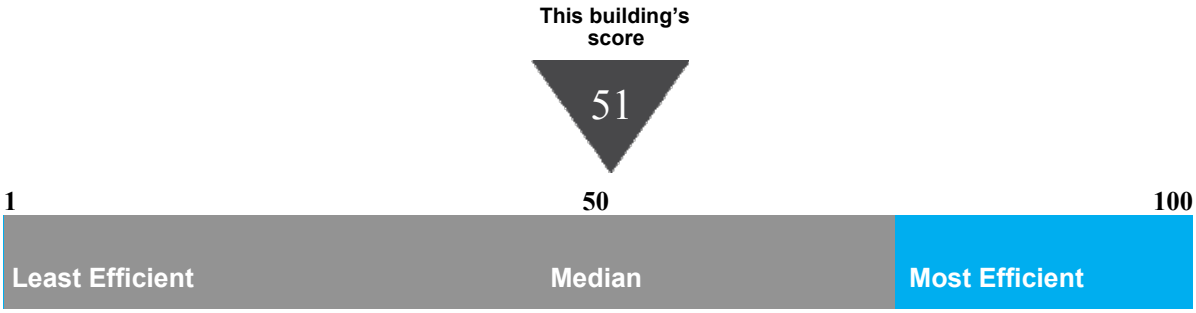
Statement of Energy Performance

2011

West Deptford School District - Middle School
675 Grove Road
West Deptford, NJ 08066

Portfolio Manager Building ID: 3278784

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 215 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 Middle School

AC Units

Tag	RTU-1	RTU-2	RTU-3
Unit Type	Packaged Rooftop Unit	Packaged Rooftop Unit	Packaged Rooftop Unit
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	Library	Middle School Offices	Band Rooms
Manufacturer	Nesbitt	Nesbitt	Nesbitt
Model #	RMA100NG5C2405AB03	RMA100NG4C2203AB04	RMA100NG602405AB03
Serial #	9603-63462	9603-63463	9603-63467
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	24 Tons	22 Tons	24 Tons
Cooling Efficiency (SEER/EER)	8.5 EER	8.5 EER	8.5 EER
Heating Type	Natural Gas	Natural Gas	Natural Gas
Heating Input (MBH)	500	400	600
Efficiency	75%	75%	75%
Fuel	Natural Gas	Natural Gas	Natural Gas
Approx Age	16	16	16
ASHRAE Service Life	15	15	15
Remaining Life	(1)	(1)	(1)
Comments	3 Zones	4 Zones	3 Zones

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

AC Units

Tag	RTU-4	RTU-5	RTU-6
Unit Type	Packaged Rooftop Unit	Packaged Rooftop Unit	Packaged Rooftop Unit
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	Kitchen	Cafeteria	Faculty
Manufacturer	Nesbitt	Nesbitt	Nesbitt
Model #	RMA100NG3C1702AB01	RMA100NG6C3005AB01	RMA100NG5C2203AB02
Serial #	9603-63466	9603-63455	9603-63464
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	17 Tons	30 Tons	22 Tons
Cooling Efficiency (SEER/EER)	8.5 EER	8.5 EER	8.5 EER
Heating Type	Natural Gas	Natural Gas	Natural Gas
Heating Input (MBH)	300	600	500
Efficiency	75%	75%	75%
Fuel	Natural Gas	Natural Gas	Natural Gas
Approx Age	16	16	16
ASHRAE Service Life	15	15	15
Remaining Life	(1)	(1)	(1)
Comments	1 Zone	1 Zone	2 Zones

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

AC Units

Tag	RTU-7	RTU-10	RTU-11
Unit Type	Packaged Rooftop Unit	Rooftop Unit w/ Remote condenser	Rooftop Unit w/ Remote condenser
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	Locker Room	Gymnasium	Gymnasium
Manufacturer	Nesbitt	Nesbitt / Carrier	Nesbitt / Carrier
Model #	RMF100NG6C2203AB01	RMF100NG6C2403AB01 / 38AKS024	RMF100NG6C2403AB01 / 38AKS024
Serial #	9808-71367	9808-71368 / 2903F42368	9808-71369 / 2903F42369
Cooling Type	N/A	DX, R-22	DX, R-22
Cooling Capacity (Tons)	N/A	20 Tons	20 Tons
Cooling Efficiency (SEER/EER)	N/A	9.5 EER	9.5 EER
Heating Type	Natural Gas	Natural Gas	Natural Gas
Heating Input (MBH)	600	600	600
Efficiency	75%	75%	75%
Fuel	Natural Gas	Natural Gas	Natural Gas
Approx Age	14	14	14
ASHRAE Service Life	15	15	15
Remaining Life	1	1	1
Comments	1 Zone	1 Zone	1 Zone

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

AC Units

Tag	RTU-12	RTU-13	RTU-14
Unit Type	Packaged Rooftop Unit	Packaged Rooftop Unit	Rooftop unit w/ remote condenser
Qty	1	1	1
Location	Roof	Roof	Roof
Area Served	Locker Room	Guidance	Tech Areas
Manufacturer	Nesbitt	Nesbitt	Nesbitt
Model #	RMF100NG6C2203AB01	RMA100NG5C2203AB05	RMF100NG5C2405AB03
Serial #	98-71370	9603-63468	9808-71366
Cooling Type	N/A	DX, R-22	DX, R-22
Cooling Capacity (Tons)	N/A	22 Tons	24 Tons
Cooling Efficiency (SEER/EER)	N/A	8.5 EER	8.5 EER
Heating Type	Natural Gas	Natural Gas	Natural Gas
Heating Input (MBH)	600	500	500
Efficiency	75%	75%	75%
Fuel	Natural Gas	Natural Gas	Natural Gas
Approx Age	14	16	14
ASHRAE Service Life	15	15	15
Remaining Life	1	(1)	1
Comments	1 Zone	5 Zones	3 Zones

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

AC Units

Tag	CU-1,2,4	CU-5	CU-6
Unit Type	Split System	Split System	Split System
Qty	3	1	1
Location	Roof	Roof	Roof
Area Served	Offices	LAV	Tech Office
Manufacturer	Carrier	Carrier	Thermal Zone
Model #	38CK024330	38CK036340	TZAA-324-2A757
Serial #	5100E09093	3501E01684	8342W471012433
Cooling Type	DX, R-22	DX, R-22	DX, R-22
Cooling Capacity (Tons)	2 Tons	3 Tons	2 Tons
Cooling Efficiency (SEER/EER)	10 SEER	10 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	12	11	2
ASHRAE Service Life	15	15	15
Remaining Life	3	4	13
Comments			

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

AC Units

Tag	CU-3		
Unit Type	Split System Heat Pump	Split System	
Qty	1	1	
Location	Roof	Roof	
Area Served	Server Room	C12-14	
Manufacturer	LG	Trane	
Model #	LSU305HV	YCD12084L0BA	
Serial #	-	G3514318	
Cooling Type	DX, R410A	DX, R-22	
Cooling Capacity (Tons)	26,400	10 Tons	
Cooling Efficiency (SEER/EER)	16 SEER	9 EER	
Heating Type	Heat Pump	Natural Gas	
Heating Input (MBH)	28,300	150	
Efficiency	-	75%	
Fuel	Heat Pump	Natural Gas	
Approx Age	2	10	
ASHRAE Service Life	15	15	
Remaining Life	13	5	
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford Middle School

Boilers

Tag		B-1,2,3,4,5,6	
Unit Type	Boiler Burner	Cast Iron Sectional Boiler	
Qty	6	6	
Location	Boiler Room	Boiler Room	
Area Served	Cast Iron Boilers	Hot Water Loop	
Manufacturer	Power Flame Burner	Weil McLain	
Model #	WCR2-C-15	P-1178-W	
Serial #	59884701	-	
Input Capacity (Btu/Hr)	1,527	1,527	
Rated Output Capacity (Btu/Hr)	-	1,250	
Approx. Efficiency %	-	75.0%	
Fuel	Natural Gas	Natural Gas	
Approx Age	14	14	
ASHRAE Service Life	35	35	
Remaining Life	21	21	
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford Middle School

Domestic Water Heaters

Tag			
Unit Type	Domestic Hot Water Storage	Domestic Hot Water Boiler	
Qty	1	1	
Location	Boiler Room	Boiler Room	
Area Served	Domestic Hot Water Boiler	Domestic Hot Water Loop	
Manufacturer	Lochinvar	Lochinvar	
Model #	RGA0318	RWN500PM	
Serial #	G983976	D988786	
Size (Gallons)	318	-	
Input Capacity (MBH/KW)	-	500 MBH	
Recovery (Gal/Hr)	-	497 Gal/hr	
Efficiency %	-	80.00%	
Fuel	-	Natural Gas	
Approx Age	14	14	
ASHRAE Service Life	12	24	
Remaining Life	(2)	10	
Comments			

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

MAJOR EQUIPMENT LIST

Concord Engineering Group

West Deptford Middle School

Pumps

Tag		
Unit Type	In Line Circulation Pumps	Base Mounted End Suction Pumps
Qty	6	1
Location	Boiler Room	Boiler Room
Area Served		Main Hot Water Pumps
Manufacturer	Bell & Gossett	Bell & Gossett
Model #	Series 60	U 2-1/2B 8-1/4BF
Serial #	2122709H89	658295
Horse Power	1/4	5
Flow	20 GPM @ 15 FTHD	218GPM @ 60FTHD
Motor Info	Bell & Gossett	Bell & Gossett
Electrical Power	115	230/460
RPM	1725	1725
Motor Efficiency %	-	87.5%
Approx Age	22	17
ASHRAE Service Life	20	20
Remaining Life	(2)	3
Comments		

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

Pumps

Tag			
Unit Type	Base Mounted End Suction Pumps	In Line Circulation Pump	
Qty	1	1	
Location	Boiler Room	Boiler Room	
Area Served	Main Hot Water Pumps	Domestic Hot Water Circulation Pump	
Manufacturer	Armstrong	Armstrong	
Model #	-	116637-061	
Serial #	-	160281	
Horse Power	5	1/6	
Flow	218GPM @ 60FTHD	-	
Motor Info	AJAX	-	
Electrical Power	230/460	115	
RPM	1740	1725	
Motor Efficiency %	87.5%	-	
Approx Age	10	10	
ASHRAE Service Life	20	20	
Remaining Life	10	10	
Comments			

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

APPENDIX E

CEG Project #: 9C12051
Facility Name: West Deptford Middle School
Address: 675 Grove Road
City, State, Zip West Deptford, NJ 08066

			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, $
34	Storage Closet	600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	58	4	0.23	139	Existing to Remain	Existing to Remain	2	58	0	0.23	139	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
36	Nurse	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	22	1.28	3,318	Existing to Remain	Existing to Remain	2	58	0	1.28	3,318	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	664	$98
32	Girl's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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
32	Boy's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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
88	Men's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
88	Women's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
66	Classroom C14	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	8	0.83	2,163	Existing to Remain	Existing to Remain	4	104	0	0.83	2,163	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	433	$64
61	Classroom C13	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic	3	86	11	0.95	2,460	Existing to Remain	Existing to Remain	3	86	0	0.95	2,460	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	492	$72
61	Classroom C12	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic	3	86	10	0.86	2,236	Existing to Remain	Existing to Remain	3	86	0	0.86	2,236	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	447	$66
36	Classroom C11	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	26	1.51	3,921	Existing to Remain	Existing to Remain	2	58	0	1.51	3,921	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	784	$115
36	Classroom C10	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	23	1.33	3,468	Existing to Remain	Existing to Remain	2	58	0	1.33	3,468	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	694	$102
66	Speech	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	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	$32
36	Classroom C9	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom C8	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom C7	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom C6	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	OT	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
66	OT	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	0	0.42	1,082	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
36	Classroom C5	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom C4	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	23	1.33	3,468	Existing to Remain	Existing to Remain	2	58	0	1.33	3,468	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	694	$102
36	Classroom C3	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom C2	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom C1	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
66	Faculty	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	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	$32
66	Faculty	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	9	0.94	2,434	Existing to Remain	Existing to Remain	4	104	0	0.94	2,434	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	487	$72

			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, $
49	Lounge	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	10	0.62	1,612	Existing to Remain	Existing to Remain	2	62	0	0.62	1,612	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	322	$47
49	Kitchen	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	14	0.87	2,257	Existing to Remain	Existing to Remain	2	62	0	0.87	2,257	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
32	Kitchen	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	28	1.74	4,514	Existing to Remain	Existing to Remain	2	62	0	1.74	4,514	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
91	Kitchen Hood	2600	100w A Lamp - Kit. Hood	1	100	5	0.50	1,300	Relamp	(1) 26w CFL Lamp	1	26	5	0.13	338	0.37	962	$141	$0.00	$0.00	$0.00	$0.00	0	0	No New Controls	0	0.0%	0	$0
32	Wash Area	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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	-	0	No New Controls	0	0.0%	0	$0
32	Lockers	3000	1x4, 2 Lamp, 32w 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
49	Kitchen Office	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	2	0.12	322	Existing to Remain	Existing to Remain	2	62	0	0.12	322	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
66	Cafeteria	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	56	5.82	15,142	Existing to Remain	Existing to Remain	4	104	0	5.82	15,142	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
30	Custodial Office	2600	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt, Prismatic Lens	1	33.2	4	0.13	345	Existing to Remain	Existing to Remain	1	33.2	0	0.13	345	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	69	$10
66	Band	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	24	2.50	6,490	Existing to Remain	Existing to Remain	4	104	0	2.50	6,490	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,298	$191
66	Practice Rooms (2)	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	2	0.21	541	Existing to Remain	Existing to Remain	4	104	0	0.21	541	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	2	20.0%	108	$16
32	Stage	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	10	0.62	1,612	Existing to Remain	Existing to Remain	2	62	0	0.62	1,612	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
60	Classroom 21	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	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	$99
60	Classroom 20	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	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	$99
60	Prep	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	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	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	134	$20
32	Girl's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. 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
32	Boy's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. 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
36	Classroom F11	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom F10	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom F9	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom F8	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	26	1.51	3,921	Existing to Remain	Existing to Remain	2	58	0	1.51	3,921	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	784	$115
36	Classroom F7	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	23	1.33	3,468	Existing to Remain	Existing to Remain	2	58	0	1.33	3,468	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	694	$102
36	Classroom F6	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	IT Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	16	0.93	2,413	Existing to Remain	Existing to Remain	2	58	0	0.93	2,413	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	483	$71
36	Classroom F5	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	28	1.62	4,222	Existing to Remain	Existing to Remain	2	58	0	1.62	4,222	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	844	$124
36	Prep	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	9	0.52	1,357	Existing to Remain	Existing to Remain	2	58	0	0.52	1,357	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	271	$40

			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, $
36	Classroom F4	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	28	1.62	4,222	Existing to Remain	Existing to Remain	2	58	0	1.62	4,222	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	844	$124
36	Prep	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	6	0.35	905	Existing to Remain	Existing to Remain	2	58	0	0.35	905	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	181	$27
36	Classroom F3	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	32	1.86	4,826	Existing to Remain	Existing to Remain	2	58	0	1.86	4,826	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	965	$142
36	Classroom F2	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	32	1.86	4,826	Existing to Remain	Existing to Remain	2	58	0	1.86	4,826	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	965	$142
36	Classroom F1	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	32	1.86	4,826	Existing to Remain	Existing to Remain	2	58	0	1.86	4,826	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	965	$142
36	Prep	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	6	0.35	905	Existing to Remain	Existing to Remain	2	58	0	0.35	905	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	181	$27
88	Women's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
88	Men's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
36	Copy Room F12	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	8	0.46	1,206	Existing to Remain	Existing to Remain	2	58	0	0.46	1,206	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	241	$35
30	Boy's Locker Room	1200	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt, Prismatic Lens	1	33.2	32	1.06	1,275	Existing to Remain	Existing to Remain	1	33.2	0	1.06	1,275	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
32	Locker Room Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	3	0.19	223	Existing to Remain	Existing to Remain	2	62	0	0.19	223	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
66	PE Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	3	0.31	811	Existing to Remain	Existing to Remain	4	104	0	0.31	811	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	162	$24
88	PE Office Restroom	2600	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	312	Relamp	2 Lamp 13w CFL	2	26	1	0.03	68	0.09	244	$36	$12.00	$28.00	$40.00	$0.00	1.113375	0	No New Controls	0	0.0%	0	$0
30	Girls Locker Room	1200	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt, Prismatic Lens	1	33.2	32	1.06	1,275	Existing to Remain	Existing to Remain	1	33.2	0	1.06	1,275	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
32	Locker Room Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	3	0.19	223	Existing to Remain	Existing to Remain	2	62	0	0.19	223	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
89	Boiler Room	600	Industrial Fixture, 100w A19 Lamp	1	100	14	1.40	840	(1) 26w CFL Lamp	(1) 26w CFL Lamp	1	26	14	0.36	218	1.04	622	$91	$140.00	$378.00	$518.00	$0.00	5.6689342	0	No New Controls	0	0.0%	0	$0
12	Boiler Room	600	8' Channel, 2 Lamp, 75w T12, Mag. Ballast, Surface Mnt., Prismatic Lens	2	142	2	0.28	170	Remove Existing - Install New Troffer	(2) 2x4, 2 Lamp 28w T8, Electronic Ballast, Prismatic Lens, Specular Reflector	4	98	2	0.20	118	0.09	53	$8	$113.80	$179.19	$292.99	$0.00	37.748598	0	No New Controls	0	0.0%	0	$0
34	Electrical Room	600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	2	58	4	0.23	139	Existing to Remain	Existing to Remain	2	58	0	0.23	139	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
32	Girls's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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
32	Boy's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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
88	Men's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
88	Women's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
36	Classroom E14	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E13	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E12	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E11	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	25	1.45	3,770	Existing to Remain	Existing to Remain	2	58	0	1.45	3,770	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	754	$111

			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, $
36	Classroom E10	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	22	1.28	3,318	Existing to Remain	Existing to Remain	2	58	0	1.28	3,318	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	664	$98
66	Office	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	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	$32
36	Classroom E9	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom E8	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E7	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E6	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom E5	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom E4	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	23	1.33	3,468	Existing to Remain	Existing to Remain	2	58	0	1.33	3,468	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	694	$102
36	Classroom E3	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E2	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom E1	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
66	Faculty	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	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	$32
61	Classroom 15A+B	2600	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic	3	86	30	2.58	6,708	Existing to Remain	Existing to Remain	3	86	0	2.58	6,708	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,342	$197
36	Classroom 14	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	35	2.03	5,278	Existing to Remain	Existing to Remain	2	58	0	2.03	5,278	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,056	$155
49	Women's Restroom	1200	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed 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
49	Men's Restroom	1200	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed 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
49	Handicap Restroom	1200	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	1	0.06	74	Existing to Remain	Existing to Remain	2	62	0	0.06	74	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
36	Guidance	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	5	0.29	754	Existing to Remain	Existing to Remain	2	58	0	0.29	754	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	151	$22
36	Computer Lab 1	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	25	1.45	3,770	Existing to Remain	Existing to Remain	2	58	0	1.45	3,770	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	754	$111
36	Classroom 10	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	36	2.09	5,429	Existing to Remain	Existing to Remain	2	58	0	2.09	5,429	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	1,086	$160
49	Classroom 9	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	13	0.81	2,096	Existing to Remain	Existing to Remain	2	62	0	0.81	2,096	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	419	$62
41	Shop 8	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	55	3.41	8,866	Existing to Remain	Existing to Remain	2	62	0	3.41	8,866	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
30	Wood Storage	600	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt, Prismatic Lens	1	33.2	8	0.27	159	Existing to Remain	Existing to Remain	1	33.2	0	0.27	159	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
30	Tool Storage	600	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt, Prismatic Lens	1	33.2	3	0.10	60	Existing to Remain	Existing to Remain	1	33.2	0	0.10	60	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
41	Classroom 7	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	28	1.74	4,514	Existing to Remain	Existing to Remain	2	62	0	1.74	4,514	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	903	$133
41	Storage Closet	600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	20	1.24	744	Existing to Remain	Existing to Remain	2	62	0	1.24	744	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, $
41	Classroom 5	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Prismatic Lens	2	62	28	1.74	4,514	Existing to Remain	Existing to Remain	2	62	0	1.74	4,514	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	903	$133
32	Girl's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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
32	Boy's Restroom	1200	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface 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
88	Men's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
88	Women's Restroom	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	1	0.12	144	Relamp	2 Lamp 13w CFL	2	26	1	0.03	31	0.09	113	$17	$12.00	$28.00	$40.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
36	Classroom D14	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom D13	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom D12	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom D11	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	23	1.33	3,468	Existing to Remain	Existing to Remain	2	58	0	1.33	3,468	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	694	$102
36	Classroom D10	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
66	Prep	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	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	$32
36	Classroom D9	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	28	1.62	4,222	Existing to Remain	Existing to Remain	2	58	0	1.62	4,222	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	844	$124
36	Classroom D8	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom D7	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom D6	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom D5	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	20	1.16	3,016	Existing to Remain	Existing to Remain	2	58	0	1.16	3,016	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	603	$89
36	Classroom D4	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	23	1.33	3,468	Existing to Remain	Existing to Remain	2	58	0	1.33	3,468	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	694	$102
36	Classroom D3	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Classroom D2	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
36	Computer Lab 2	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	24	1.39	3,619	Existing to Remain	Existing to Remain	2	58	0	1.39	3,619	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	724	$106
66	Conference Room	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	4	0.42	1,082	Existing to Remain	Existing to Remain	4	104	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	$32
36	Board Offices	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	12	0.70	1,810	Existing to Remain	Existing to Remain	2	58	0	0.70	1,810	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	362	$53
50	Board Offices	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	2	58	29	1.68	4,373	Existing to Remain	Existing to Remain	2	58	0	1.68	4,373	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	875	$129
32	Board Offices	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	2	62	7	0.43	1,128	Existing to Remain	Existing to Remain	2	62	0	0.43	1,128	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	226	$33
68	Board Offices	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	4	104	7	0.73	1,893	Existing to Remain	Existing to Remain	4	104	0	0.73	1,893	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	379	$56
50	Board Offices	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	2	58	3	0.17	452	Existing to Remain	Existing to Remain	2	58	0	0.17	452	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	90	$13

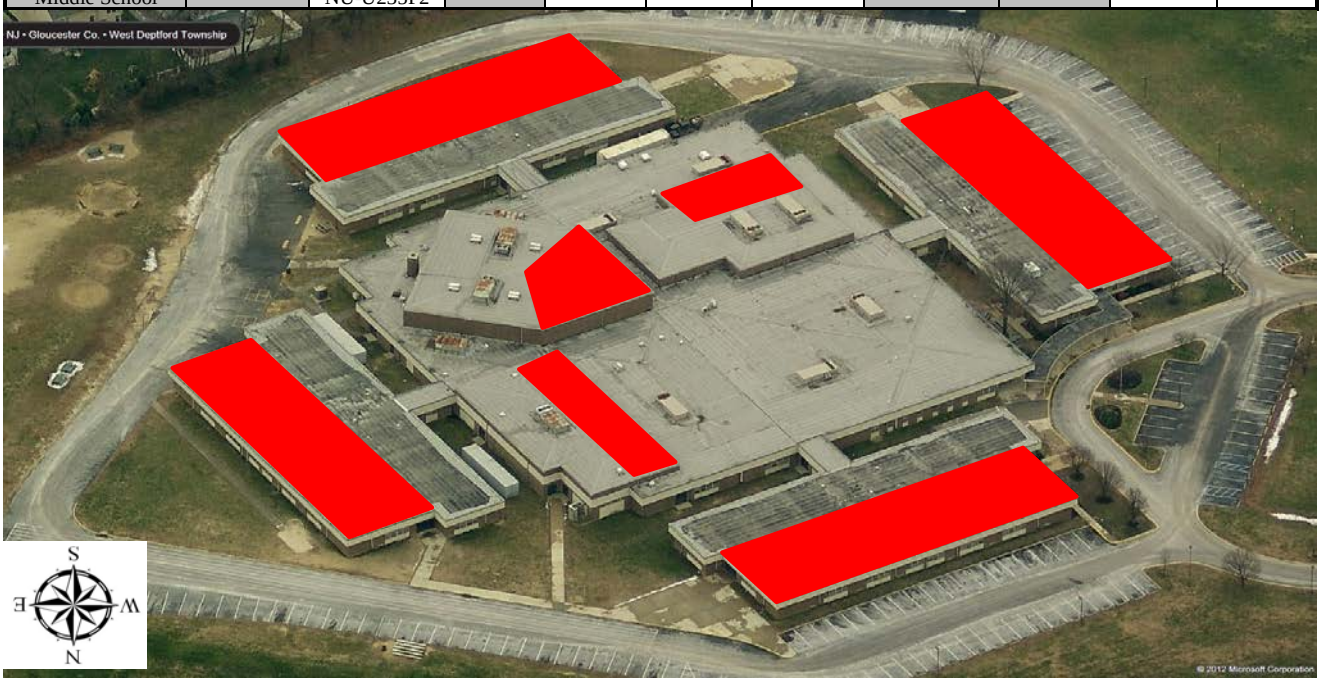
			Existing Fixtures						Proposed Fixtures Retrofit							Retrofit Energy Savings			Lighting Retrofit Costs					Proposed Lighting Controls					
Fixture Reference #	Location	Average Burn Hours	Description	Lamps per Fixture	Watts per Fixture	Qty of Fixtures	Total kW	Usage kWh/Yr	Work Description	Equipment 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, $
66	Board Offices	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	1	0.10	270	Existing to Remain	Existing to Remain	4	104	0	0.10	270	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	54	$8
58	Board Offices	2600	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	58	1	0.06	151	Existing to Remain	Existing to Remain	2	58	0	0.06	151	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	30	$4
66	Library	2600	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	104	40	4.16	10,816	Existing to Remain	Existing to Remain	4	104	0	4.16	10,816	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
36	Student Work Area	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	12	0.70	1,810	Existing to Remain	Existing to Remain	2	58	0	0.70	1,810	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
36	Conference Room	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	8	0.46	1,206	Existing to Remain	Existing to Remain	2	58	0	0.46	1,206	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	4	Dual Technology Occupancy Sensor - Remote Mnt.	1	20.0%	241	$35
36	Guidance 29	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	8	0.46	1,206	Existing to Remain	Existing to Remain	2	58	0	0.46	1,206	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	241	$35
36	Main Office	2600	1x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic	2	58	28	1.62	4,222	Existing to Remain	Existing to Remain	2	58	0	1.62	4,222	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
30	Copy Room F12	600	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt, Prismatic Lens	1	33.2	5	0.17	100	Existing to Remain	Existing to Remain	1	33.2	0	0.17	100	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	1	20.0%	20	$3
49	Side Offices (5)	2600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed 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	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	5	20.0%	516	$76
58	Side Offices (5)	2600	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	58	9	0.52	1,357	Existing to Remain	Existing to Remain	2	58	0	0.52	1,357	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	5	Dual Technology Occupancy Sensor - Switch Mnt.	5	20.0%	271	$40
88	Restrooms	1200	Wall Mnt. Globe w/Cage, (2) 60w A19 Lamps	2	120	2	0.24	288	Relamp	2 Lamp 13w CFL	2	26	2	0.05	62	0.19	226	$33	$24.00	$56.00	$80.00	$0.00	2.4123124	0	No New Controls	0	0.0%	0	$0
49	Files	600	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	2	62	8	0.50	298	Existing to Remain	Existing to Remain	2	62	0	0.50	298	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
	TOTAL			**312**	**9833.2**	**2,163**	**137**	**338,607**					**32**	**134**	**335,598**	**3**	**3,009**	**442**	**386**	**865**	**1,251**	**0**				**103**	**19**	**54,511**	**8,013**

CEG Project #: 9C12051
Facility Name: West Deptford Middle School
Address: 675 Grove Road
City, State, Zip West Deptford, NJ 08066

			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, $
125	Gym	2600	250w MH Down Light w/Prismatic Lens	1	295	36	10.62	27,612	2x4, 6 Lamp, 32w T8, Elect. Ballast, Lo Bay	2x4, 6 Lamp, 32w T8, Elect. Ballast, Lo Bay	168	168	36	6.05	15,725	4.57	11,887	$1,747	$8,640.00	$6,660.00	$15,300.00	$0.00	8.7557737	0	No New Controls	0	0.0%	0	$0
72	Gym	2600	2x2, 4 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	4	68	6	0.41	1,061	Existing to Remain	Existing to Remain	4	68	0	0.41	1,061	0.00	0	$0	$0.00	$0.00	$0.00	$0.00	-	0	No New Controls	0	0.0%	0	$0
	TOTAL					**42**	**11**	**28,673**					**36**	**6**	**16,786**	**5**	**11,887**	**1,747**	**8,640**	**6,660**	**15,300**	**0**				**0**	**0**	**0**	**0**

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 Middle School	28350	SHARP NU-U235F2	1158	17.5	20,312	272.13	322,321	220.4	48,520	13.40



.= Proposed PV Layout

Notes:

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

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

Simple Payback Analysis

	Photovoltaic System 100% Financing - 15 year
Total Construction Cost	$1,618,875
Annual kWh Production	322,321
Annual Energy Cost Reduction	$47,381
Average Annual SREC Revenue	$61,591

Simple Payback: **14.86** Years

Life Cycle Cost Analysis

Analysis Period (years): 15
Discount Rate: 3%
Average Energy Cost ($/kWh) **$0.147**
Financing Rate: 6.00%
Financing %: 100%
Maintenance Escalation Rate: 3.0%
Energy Cost Escalation Rate: 3.0%
Average SREC Value ($/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	322,321	$47,381	$0	$80,580	$95,265	$68,667	($35,970)	($35,970)
2	$0	320,709	$48,803	$0	$80,177	$91,029	$72,903	($34,952)	($70,922)
3	$0	319,106	$50,267	$0	$79,776	$86,533	$77,399	($33,889)	($104,811)
4	$0	317,510	$51,775	$0	$79,378	$81,759	$82,173	($32,780)	($137,591)
5	$0	315,923	$53,328	$3,254	$78,981	$76,691	$87,241	($34,877)	($172,468)
6	$0	314,343	$54,928	$3,238	$62,869	$71,310	$92,622	($49,373)	($221,841)
7	$0	312,771	$56,576	$3,222	$62,554	$65,597	$98,335	($48,024)	($269,865)
8	$0	311,208	$58,273	$3,205	$62,242	$59,532	$104,400	($46,623)	($316,487)
9	$0	309,652	$60,021	$3,189	$61,930	$53,093	$110,839	($45,170)	($361,657)
10	$0	308,103	$61,822	$3,173	$46,215	$46,257	$117,675	($59,068)	($420,726)
11	$0	306,563	$63,676	$3,158	$45,984	$38,999	$124,933	($57,429)	($478,154)
12	$0	305,030	$65,587	$3,142	$45,754	$31,293	$132,639	($55,733)	($533,887)
13	$0	303,505	$67,554	$3,126	$45,526	$23,112	$140,820	($53,978)	($587,865)
14	$0	301,987	$69,581	$3,110	$30,199	$14,427	$149,505	($67,263)	($655,128)
15	$0	300,477	$71,668	$3,095	$30,048	$5,206	$158,726	($65,311)	($720,438)
	Totals:	4,669,208	$881,239	$34,912	$892,214	$840,103	$1,618,875	($720,438)	($5,087,810)

Net Present Value (NPV) **($525,564)**