MERCHANTVILLE-PENNSAUKEN WATER COMMISSION

PARK AVENUE TREATMENT PLANT

ENERGY ASSESSMENT

FOR
NEW JERSEY
BOARD OF PUBLIC UTILITIES

JANUARY 2013

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CHA PROJECT NO. 24770

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APPENDICES

REPORT DISCLAIMER

This audit was conducted in accordance with the standards developed by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) for a Level II audit. Cost and savings calculations for a given measure were estimated to within ±20%, and are based on data obtained from the owner, data obtained during site observations, professional experience, historical data, and standard engineering practice. Cost data does not include soft costs such as engineering fees, legal fees, project management fees, financing, etc.

A thorough walkthrough of the water treatment plant was performed, which included gathering nameplate information and operating parameters for all accessible equipment and lighting systems. Unless otherwise stated, model, efficiency, and capacity information included in this report were collected directly from equipment nameplates and /or from documentation provided by the owner during the site visit. Typical operation and scheduling information was obtained from interviewing staff and spot measurements taken in the field.

1.0 EXECUTIVE SUMMARY

This energy audit is performed by CHA in connection with the New Jersey Board of Public Utilities' Local Government Energy Audit Program for the Merchantville-Pennsauken Water Commission. The purpose of this report is to convey the findings of the energy audit to identify energy savings potential associated with major energy consumers and inefficient practices. This report details the results of the energy audit conducted for

Building Name	Address	Square Feet	Construction Date
Park Avenue Water Treatment Plant	8790 Park Avenue Pennsauken, NJ 08109	4,000	2004

The potential annual energy and cost savings for each energy conservation measure (ECM) is shown below in Table 1. Each individual measure's annual savings are dependent on that measure alone, there are no interactive effects calculated. There are three options shown for Lighting ECM savings; only one option can be chosen. Incentives shown (if any) are based only on the SmartStart Incentive Program. Other NJBPU or local utility incentives may also be available/ applicable and are discussed in Section 5.0.

Each measure recommended by CHA typically has a simple payback period of 15 years or less to be consistent with the requirements of the Energy Savings Improvement Plan (ESIP) which has a maximum payback period of 15 years. Occasionally, we will recommend an ECM that has a longer payback period, based on the need to replace that piece(s) of equipment, such as a boiler for example. If the recommended measures are implemented a total potential annual savings $800 may be realized with a payback period of 8.9 years.

Table 1: Summary of Energy Conservation Measures

Summary of Energy Conservation Measures							
Energy Conservation Measure		**Approx. Costs ($)**	**Approx. Savings ($/year)**	**Payback (Years) w/o Incentive**	**Potential Incentive ($)***	**Payback (Years) w/ Incentive**	**Recommended**
ECM 1	Replace Boiler with Condensing Boiler	40,000	400	>20	400	>20	
ECM 2	Replace Window AC Units with Ductless Split System	3,000	30	>20	100	>20	
ECM 3	Replace DWH w/ Tankless Instantaneous Unit	9,000	100	>20	600	>20	
ECM 4	Lighting Replacement s / Upgrades	7,000	500	14.0	400	13.2	
ECM 5	Install Lighting Controls (occupancy sensors)	1,000	500	2.0	500	1.0	X
ECM 6	Lighting Replacement s with Lighting Controls	8,000	800	10.0	900	8.9	X

2.0 INTRODUCTION AND BACKGROUND

The Park Avenue Water Treatment Plant is an enclosed property totaling 4,000 square foot. The property consists of a main office building, a high service pump house and outdoor areas that have various well pumps. The main and high service pump buildings are one floor. The office building was constructed in 2004. The office building includes the following spaces: offices, locker rooms, kitchen, storage, toilet rooms, a main plant floor, and a conference room. The hours of operation are from 7:00 AM – 4:00 PM Monday through Friday. The office has approximately 4 faculty members and approximately 5 computers.

New Jersey's Clean Energy Program, funded by the New Jersey Board of Public Utilities, supports energy efficiency and sustainability for Municipal and Local Government Energy Audits. Through the support of a utility trust fund, New Jersey is able to assist state and local authorities in reducing energy consumption while increasing comfort.

Figure 1: Park Avenue Water Treatment Plant

3.0 UTILITY

Utilities include electricity and natural gas. Electricity is delivered by Public Service Enterprise Group (PSE&G) and supplied by Reliant Energy Northeast LLC. Natural gas is delivered by PSE&G and supplied by Hudson Energy Service. The water commission did not provide bills for its water usage.

For the 12-month period ending in August 2012, the utilities usage for the building was as follows:

Table 2: Actual Cost & Site Utility Usage

Electric		
Annual Usage	2,065,000	kWh/year
Annual Cost	271,010	$
Blended Rate	0.148	$/kWh
Supply Rate	0.130	$/kWh
Demand Rate	6.90	$/kW
Peak Demand	370.0	kW
Min. Demand	244.0	kW
Avg. Demand	309.8	kW
Natural Gas		
Annual Usage	7,718	Therms/year
Annual Cost	3,494	$
Rate	0.453	$/Therm

Electrical usage was generally higher in the summer months when window air conditioning equipment was operational. Natural gas consumption was highest in winter months for heating. See Appendix A for a detailed utility analysis.

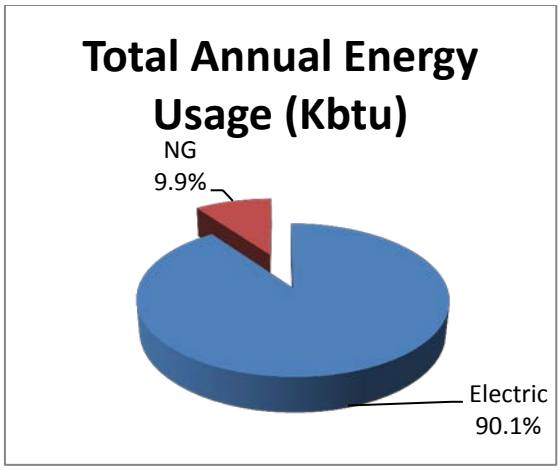


Figure 2: Annual Site Energy Usage

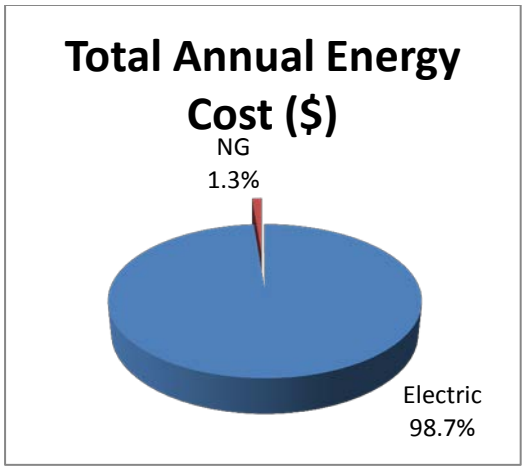


Figure 3: Annual Energy Cost

Under New Jersey's energy deregulation law, the supply portion of the electric (or natural gas) bill is separated from the delivery portion. The supply portion is open to competition, and customers can shop around for the best price for their energy suppliers. The electric and natural gas distribution utilities will still deliver the gas/ electric supplies through their wires and pipes – and respond to emergencies, should they arise – regardless of where those supplies are purchased. Purchasing the energy supplies from a company other than your electric or gas utility is purely an economic decision; it has no impact on the reliability or safety of the service. Additional information on selecting a third party energy supplier is available here:

http://www.state.nj.us/bpu/commercial/shopping.html.

See Appendix A for a list of third-party energy suppliers licensed by the Board of Public Utilities to sell within the building's service area.

4.0 EXISTING CONDITIONS

Energy conservation measures (ECM's) are energy savings recommendations that typically require a financial investment. Energy savings can be in the form of electrical demand (KW=kilowatts), electrical usage (Kwh=Kilowatt-hour), natural gas (Therms=100,000 BTU), propane gas (Gallons=91,650 BTU), Fuel Oil (Gallons =138,700 Btu) and water (KGAL=1000 gallons).

These recommendations are influenced by the time period that it takes to "break even" referred to as Simple Payback. Simple payback is calculated by dividing the cost of implementing the ECM by the energy cost savings (in dollars) of that ECM.

Another financial indicator of the performance of a particular ECM is the Return on Investment or ROI.

4.1 Building Envelope

The original building is constructed of face brick with no insulation. The interior walls are painted block.

The new filter building has operable aluminum framed double glazing windows. The windows seem to be in good condition. The doors were installed at the same time as the windows. They are also in good condition.

The roof is steel decking with no insulation. During the site visit it was noted that the roof was in fair condition.

There are no ECMs associated with the building envelope.

4.2 Process Equipment

Water is pumped by (2) 94.5% efficient 40.0 HP, (2) 94.5% efficient 50.0 HP, and (1) 95.0% efficient 60.0 HP motor that feeds a 3 million gallon (MG) storage tank. These pumps are controlled by a sensor that shuts down the pumps when the tank reaches 30 feet of water and turns them on when the tank drops below to 20 ft. The facility also has (2) 95.8% efficient 250.0 HP high service pumps to pump water from the plant to the homes. All the pumps are equipped with VSDs and monitored by the operator on staff.

There are no ECMs associated with the process equipment.

4.3 HVAC Systems

4.3.a Heating Hot Water System

Park Avenue Water Treatment Plant is heated by (1) natural gas fired boiler manufactured Lochinvar. According to the nameplate data the boiler has an input of 399,000 BTU/hr, an output 327,180 BTU/hr and 82% efficiency. These boilers are in good condition and have 17 years of useful life left according to ASHRAE. This boiler serves the ceiling mounted air handling units to provide heat to various spaces. These units serve the offices, conference room and locker rooms. Supplemental heat is

provided by gas fired radiant heaters that are controlled by wall mounted thermostats. These units are in good condition.

Specifics on mechanical equipment can be found within the equipment inventory located in Appendix B.

4.3.b Direct Expansion (DX) Cooling Systems

Cooling is provided to the HSP House by a window air conditioning unit. The unit is a 1.25-ton Electrolux GAM155Q1A1 with a SEER rating of 9.0. This unit is controlled by the personnel and operated during summer hours. The Conference Room, Kitchen, and offices have dedicated air handling units with remote condensers to cool these spaces on hot days. These units are located above the ceiling in each space and have a remote condensing unit located outside of the building on the ground. The units provide both heat and cooling are operational from 7am-3pm. During the audit the staff informed CHA that they were shut off at the close of the business day.

Specifics on mechanical equipment can be found within the equipment inventory located in Appendix B.

The following ECMs were identified as HVAC system improvements:

4.3.1 ECM-1 Replace Boiler with a Condensing Boiler

This ECM would involve replacing the existing boilers with one (1) 399 MBH condensing boiler. Condensing boilers operate at higher efficiencies when producing lower water temperatures, typically in the 92-96% range. The increased system efficiency will result in lower natural gas usage. The proposed boiler replacement will involve piping and wiring modifications as well as new venting and combustion air ducting.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-1 Replace Boiler with a Condensing Boiler

Budgetary Cost	Annual Utility Savings					Estimated Maintenance Savings	Total Savings	ROI	Potential Incentive*	Payback (without Incentive)	Payback (with Incentive)
	Electricity		Natural Gas	Water	Total						
$	kW	kWh	Therms	kGals	$	$	$		$	Years	Years
40,000	0	0	800	0	400	0	400	(0.9)	400	>20	>20

* Incentive shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities

Expected Life: 25 years

Lifetime Savings: 0 kWh 20,000 therms $ 10,000

This measure is recommended

4.3.2 ECM-2 Replace Window AC Unit with Ductless Split System

An assessment was performed which considered replacing the existing window unit with a more efficient DX cooling split system that has a SEER of 14.0 .

The assumption of this calculation is that the operating hours and capacity remain the same. The energy savings is the result of operating a higher efficiency unit.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-2 Replace Window AC Unit with Ductless Split System

Budgetary Cost	Annual Utility Savings					Estimated Maintenance Savings	Total Savings	ROI	Potential Incentive*	Payback (without Incentive)	Payback (with Incentive)
	Electricity		Natural Gas	Water	Total						
$	kW	kWh	Therms	kGals	$	$	$		$	Years	Years
3,000	0	200	0	0	30	0	30	(0.9)	100	>20	>20

* Does not qualify for Incentive from the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

Expected Life: 15 years

Lifetime Savings: 3,000 kWh 0 therms $450

This measure is not recommended.

4.4 Control Systems

The building is controlled by a Johnson Controls Metasys 6000 building automation system (BAS). The boiler and air handling units are controlled by the BAS. The heating system is gas fired radiant heaters. Each heater has its own thermostat. The office in the main building utilizes a window ac unit to condition the space in the summer. The window air conditioning units that are used are manually controlled by the operators.

Typical temperature set points are 70°F heating and 74°F cooling during occupied times. There are no unoccupied set back procedures in place due to the systems being shut off at the end of the business day.

There are no ECMs associated with the control systems because the facility uses window air conditioning units to condition the offices and they are manually turned off at the end of each business day. In addition the air handling units are shut off as well.

4.5 Domestic Hot Water System

Park Avenue Water Treatment Plant has (2) two natural gas domestic hot water heater located in the mechanical room. The water heaters are Bradford White MIITW75T6BN12 natural gas commercial domestic hot water heater with a capacity of 75 gallons, an input of 76,000 btu/hr and an efficiency of 80%. The domestic hot water heaters serve the

sinks. This water heater is in good condition but only has 4 more years of useful life left according to ASHRAE.

The following ECM identifies an improvement to the water treatment plant's Domestic Hot Water System:

4.5.1 ECM-3 Replace Domestic Hot Water Heater w/ Instantaneous unit

This ECM assesses replacing this DWH with a more efficient tankless type domestic water heater sized to meet the DHW needs of the building.

According to the U.S. Department of Energy, 2.5% of stored capacity is lost every hour from the tank during DHW heater standby. This value was applied to the total yearly volume to determine annual standby losses. Proposed efficiency was based on a typical high efficiency natural gas condensing type hot water heater. The new water heater will require water and gas piping modifications, venting, and electrical connections.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-3 Replace Domestic Hot Water Heater w/ Instantaneous unit

Budgetary Cost	Annual Utility Savings					Estimated Maintenance Savings	Total Savings	ROI	Potential Incentive*	Payback (without Incentive)	Payback (with Incentive)
	Electricity		Natural Gas	Water	Total						
$	kW	kWh	Therms	Kgals	$	$	$		$	Years	Years
9,000	0	0	200	0	100	0	100	(0.9)	600	>20	>20

* Incentive shown is per the New Jersey SmartStart Install Program. See section 5.0 for other incentive opportunities.

Expected Life: 12 years

Lifetime Savings: 0 kWh 2,400 therms $ 1,200

This measure is not recommended.

4.6 Lighting/Electrical Systems

The lighting in the facility includes compact florescent lighting (CFLs) and T-8 linear tube fluorescents. The T-8s have electronic ballasts. All of the spaces utilize 32 watt T-8 fluorescent tube fixtures except the storage rooms. The main plant floor also has 175W metal Halides but facility personnel indicated that they were rarely switched on. The building exterior utilizes a 400W metal halide wall packs that are controlled by a timer.

The office of the treatment plant has approximately 5 computers

The following ECMs identified are improvements to Park Avenue Water Treatment Plant's lighting and electrical system:

4.6.1 ECM-4 Lighting Replacement / Upgrades

Energy savings for this measure were calculated by applying the existing and proposed fixture wattages to estimated times of operation. The difference between energy requirements resulted in a total annual savings of 3,100 kWh with an electrical demand reduction of about 1.5 kW. These calculations are based upon 1 to 1 replacements with the fixtures. They do not take into account lumen output and square footage. A more comprehensive study may be performed to determine correct lighting levels. Supporting calculations, including assumptions for lighting hours and annual energy usage for each fixture, are provided in Appendix C.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-4 Lighting Replacement / Upgrades

Budgetary Cost	Annual Utility Savings					Estimated Maintenance Savings	Total Savings	ROI	Potential Incentive*	Payback (without Incentive)	Payback (with Incentive)
	Electricity		Natural Gas	Water	Total						
$	kW	kWh	Therms	kGals	$	$	$		$	Years	Years
7,000	1.5	3,100	0	0	500	0	500	(0.1)	400	14.0	13.2

* Incentive shown is per the New Jersey SmartStart Program. See section 5.0 for other incentive opportunities.

Expected Life: 15 years

Lifetime Savings: 46,500 kWh 0 therms $ 7,500

This measure is not recommended in lieu of ECM-6.

4.6.2 ECM-5 Install Lighting Controls (Occupancy Sensors)

Review of the comprehensive lighting survey determined that lighting in various spaces are typically left on regardless of occupancy. Therefore, installing an occupancy sensor in these spaces to turn off lights when the areas are unoccupied was assessed.

This measure recommends installing occupancy sensors for the current lighting system. Using a process similar to that utilized in section 4.5.1, the energy savings for this measure was calculated by applying the known fixture wattages in the space to the estimated existing and proposed times of operation for each fixture. The difference between the two values resulted in an annual savings of 27,000 kWh.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-5 Install Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings					Estimated Maintenance Savings	Total Savings	ROI	Potential Incentive *	Payback (without Incentive)	Payback (with Incentive)
	Electricity		Natural Gas	Water	Total						
$	kW	kWh	Therms	kGals	$	$	$		$	Years	Years
1,000	0	3,700	0	0	500	0	500	12.7	500	2.0	1.0

* Incentive shown is per the New Jersey Direct Install Program. See section 5.0 for other incentive opportunities.

Expected Life: 15 years

Lifetime Savings: 55,500 kWh 0 therms $7,500

This measure is not recommended in lieu of ECM-6.

4.6.3 ECM-6 Lighting Replacements with Controls (Occupancy Sensors)

This measure is a combination of ECM-4 and ECM-5; recommending replace/upgrade the current lighting fixtures to more efficient ones and installing occupancy sensors on the new lights. Interactive effects of the higher efficiency lights and occupancy sensors lead the energy and cost savings for this measure to not be cumulative or equivalent to the sum of replacing the lighting fixtures alone and installing occupancy sensors without the lighting upgrade.

The implementation cost and savings related to this ECM are presented in Appendix C and summarized below:

ECM-6 Lighting Replacements with Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings					Estimated Maintenance Savings	Total Savings	ROI	Potential Incentive *	Payback (without Incentive)	Payback (with Incentive)
	Electricity		Natural Gas	Water	Total						
$	kW	kWh	Therms	kGals	$	$	$		$	Years	Years
8,000	1.5	5,600	0	0	800	0	800	0.6	900	10.0	8.9

* Incentive shown is per the New Jersey Direct Install Program. See section 5.0 for other incentive opportunities.

Expected Life: 15 years

Lifetime Savings: 84,000 kWh 0 therms $12,000

This measure is recommended.

4.7 Plumbing Systems

All of the plumbing fixtures appear to be in good condition and are equipped with low-flow 1.6 Gal/ flush valves for the water closets and 1.0 Gal/ flush valves for the urinals.

There are no ECMs associated with the plumbing system because the water treatment plant uses well water and does not pay a utility for it.

5.0 PROJECT INCENTIVES

5.1 Incentives Overview

5.1.1 New Jersey Smart Start Program

For this energy audit, The New Jersey Smart Start Incentives are used in the energy savings calculations, where applicable. This program is intended for medium and large energy users and provides incentives for:

- Electric Chillers
- Gas Chillers
- Gas Heating
- Unitary HVAC
- Ground Source Heat Pumps
- Variable frequency Drives/ motors
- Refrigeration
- Prescriptive and performance lighting and lighting controls

The equipment is procured using a typical bid- build method, installed and paid for and then the incentives are reimbursed to the school.

If the School District wishes to and is eligible to participate in the Energy Savings Improvement Plan (ESIP) program and/or the Pay for Performance Incentive Program (P4P), it cannot participate in either the Smart Start or Direct Install Programs. Refer to appendix D for more information on the Smart Start program.

5.1.2 Direct Install Program

The Direct Install Program applies to smaller facilities that have a peak electrical demand of 150 kW or less in any of the previous 12 months. Buildings must be located in New Jersey and served by one of the state's public, regulated electric utility companies.

Direct Install is funded through New Jersey's Clean Energy Program and is designed to provide capital for building energy upgrade projects to fast track implementation. The program will pay up to 70% of the costs for lighting, HVAC, motors, refrigeration, and other equipment upgrades with higher efficiency alternatives. If a building is eligible for this funding, the Direct Install Program can reduce the implementation cost of energy conservation projects.

The Direct install program has specific HVAC equipment and lighting requirements and are generally applicable only to smaller package HVAC units, small boilers and lighting retrofits.

The program pays a maximum amount of $75,000 per building, and up to $250,000 per customer per year. Installations must be completed by an approved Direct Install participating contractor, a list of which can be found on the New Jersey Clean Energy Website. Contractors will coordinate with the applicant to arrange installation of recommended measures identified in a previous energy assessment, such as this

energy audit. The incentive is reimbursed to the treatment plant upon successful replacement and payment of the equipment.

This plant is not eligible to receive funding from the Direct Install Program because the electrical demand is greater than the maximum peak electrical demand of 150 kW in the last 12 month period.

Refer to appendix D for more information on this program.

5.1.3 Public Service Electric and Gas (PSE&G) Direct Install Program

The Public Service Electric and Gas (PSE&G) Direct Install Program targets government and non-profit customer facilities where the peak electrical demand does not exceed 150 kW in any of the previous 12 months. Customers must be a PSE&G customer of record with separately metered PSE&G electric or gas account.

Direct Install is funded through PSE&G and is designed to provide capital for building energy upgrade projects to fast track implementation. The program will pay up to 80% of the costs for lighting retrofits including sensors and controls, refrigeration, motors, HVAC and site-specific custom projects. PSE&G makes the investment in energy efficiency upgrades easy for the client by initially covering 100% of the cost to install the recommended energy efficiency measures. The client will repay the remaining 20% of the total cost to install the energy efficiency measures, interest free, over the next two years on your PSE&G bill or one lump sum payment depending on the clients preference. If a building is eligible for this funding, the PSE&G Direct Install Program can significantly reduce the implementation cost of energy conservation projects.

Installations must be completed by a PSE&G Direct Install participating contractor which is assigned by the PSE&G project manager. More information regarding the program can be found on PSE&G's website at:
http://www.pseg.com/business/small_large_business/save_energy/gov_efficiency.jsp.
Contractors will coordinate with the applicant to arrange installation of recommended measures identified in a previous energy assessment, such as this document once the cost proposal is approved.

This program is not applicable to the Park Avenue Water Treatment Plant based on the program requirements.

5.1.4 New Jersey Pay For Performance Program (P4P)

The facility will be eligible for incentives from the New Jersey Office of Clean Energy. The most significant incentives are available from the New Jersey Pay for Performance (P4P) Program. The P4P program is designed for qualified energy conservation projects applied to facilities whose demand in any of the preceding 12 months exceeds 100 kW. This average minimum has been waived for buildings owned by local governments or municipalities and non-profit organizations, however. Facilities that meet this criterion must also achieve a minimum performance target of 15% energy reduction by using the EPA Portfolio Manager benchmarking tool before and after implementation of the

measure(s). If the participant is a municipal electric company customer, and a customer of a regulated gas New Jersey Utility, only gas measures will be eligible under the Program. Available incentives are as follows:

Incentive #1: Energy Reduction Plan – This incentive is designed to offset the cost of services associated with the development of the Energy Reduction Plan (ERP).

- Incentive Amount: $0.10/SF
- Minimum incentive: $5,000
- Maximum Incentive: $50,000 or 50% of Facility annual energy cost

The standard incentive pays $0.10 per square foot, up to a maximum of $50,000, not to exceed 50% of facility annual energy cost, paid after approval of application. For building audits funded by the New Jersey Board of Public Utilities, which receive an initial 75% incentive toward performance of the energy audit, facilities are only eligible for an additional $0.05 per square foot, up to a maximum of $25,000, rather than the standard incentive noted above.

Incentive #2: Installation of Recommended Measures – This incentive is based on projected energy savings as determined in Incentive #1 (Minimum 15% savings must be achieved), and is paid upon successful installation of recommended measures.

Electric

- Base incentive based on 15% savings: $0.09/ per projected kWh saved.
- For each % over 15% add: $0.005 per projected kWh saved.
- Maximum incentive: $0.11/ kWh per projected kWh saved

Gas

- Base incentive based on 15% savings: $0.90/ per projected Therm saved.
- For each % over 15% add: $0.05 per projected Therm saved.
- Maximum incentive: $1.25 per projected Therm saved

Incentive cap: 25% of total project cost

Incentive #3: Post-Construction Benchmarking Report – This incentive is paid after acceptance of a report proving energy savings over one year utilizing the Environmental Protection Agency (EPA) Portfolio Manager benchmarking tool.

Electric

- Base incentive based on 15% savings: $0.09/ per projected kWh saved.
- For each % over 15% add: $0.005 per projected kWh saved.
- Maximum incentive: $0.11/ kWh per projected kWh saved

Gas

- Base incentive based on 15% savings: $0.90/ per projected Therm saved.
- For each % over 15% add: $0.05 per projected Therm saved.
- Maximum incentive: $1.25 per projected Therm saved

Combining incentives #2 and #3 will provide a total of $0.18/ kWh and $1.8/therm not to exceed 50% of total project cost. Additional incentives for #2 and #3 are increased by $0.005/kWh and $0.05/therm for each percentage increase above the 15% minimum

target to 20%, calculated with the EPA Portfolio Manager benchmarking tool, not to exceed 50% of total project cost.

Total P4P incentives are summarized below:

	Incentives $		
	Electric	**Gas**	**Total**
Incentive #1	$0	$0	$5,000
Incentive #2	$0	$0	$0
Incentive #3	$0	$0	$0
Total	**$0**	**$0**	**$5,000**

The current ECM's do not meet the minimum savings requirement of 15% for the Pay for Performance Program and therefore the building wouldn't be eligible for incentives #2 and #3. See Appendix D for additional details.

5.1.5 New Jersey Smart Start Program

For this program, specific incentives for energy conservation measures are calculated on an individual basis utilizing the 201 New Jersey Smart Start incentive program. This program provides incentives dependent upon mechanical and electrical equipment. If applicable, incentives from this program are reflected in the ECM summaries and attached appendices.

If the facility qualifies and enters into the New Jersey Pay for Performance Program, all energy savings will be included in the total site energy reduction, and savings will be applied towards the Pay for Performance incentive. A project is not applicable for both New Jersey incentive programs. The calculations in this report use the Smart Start program incentives.

5.1.6 Energy Savings Improvement Plan (ESIP)

The Energy Savings Improvement Program (ESIP) allows government agencies to make energy related improvements to their facilities and pay for the costs using the value of energy savings that result from the improvements. Under the recently enacted Chapter 4 of the Laws of 2009 (the law), the ESIP provides all government agencies in New Jersey with a flexible tool to improve and reduce energy usage with minimal expenditure of new financial resources.

ESIP allows local units to use "energy savings obligations" to pay for the capital costs of energy improvements to their facilities. This can be done over a maximum term of 15 years. Energy savings obligations are not considered "new general obligation debt" of a local unit and do not count against debt limits or require voter approval. They may be issued as refunding bonds or leases. Savings generated from the installation of energy conservation measures pay the principal of and interest on the bonds; for that reason, the debt service created by the ESOs is not paid from the debt service fund, but is paid from the general fund.

For local governments interested in pursuing an ESIP, the first step is to perform an energy audit. Pursuing a Local Government Energy Audit through New Jersey's Clean Energy Program is a valuable first step to the ESIP approach. The “Local Finance Notice” outlines how local governments can develop and implement an ESIP for their facilities. The ESIP can be prepared internally if the entity has qualified staff. If not, the ESIP must be implemented by an independent contractor and not by the energy savings company producing the Energy Reduction Plan.

The ESIP approach may not be appropriate for all energy conservation and energy efficiency improvements. Local units should carefully consider all alternatives to develop an approach that best meets their needs. Refer to appendix D for more information on this program.

6.0 ALTERNATIVE ENERGY SCREENING EVALUATION

6.1 Solar

6.1.1 Photovoltaic Rooftop Solar Power Generation

The facility was evaluated for the potential to install rooftop photovoltaic (PV) solar panels for power generation. Present technology incorporates the use of solar cell arrays that produce direct current (DC) electricity. This DC current is converted to alternating current (AC) with the use of an electrical device known as an inverter. The building's roof has sufficient room to install a large solar cell array. However, there is not enough available area to size a system to meet the demand of the building.

The PVWATTS solar power generation model was utilized to calculate PV power generation; this model is provided in Appendix F.

Installation of (PV) arrays in the state New Jersey will allow the owner to participate in the New Jersey solar renewable energy certificates program (SREC). This is a program that has been set up to allow entities with large amounts of environmentally unfriendly emissions to purchase credits from zero emission (PV) solar-producers. An alternative compliance penalty (ACP) is paid for by the high emission producers and is set each year on a declining scale of 3% per year. One SREC credit is equivalent to 1000 kilowatt hours of PV electrical production; these credits can be traded for period of 15 years from the date of installation. The cost of the ACP penalty for 2011 is $600; this is the amount that must be paid per SREC by the high emission producers. The expected dollar amount that will be paid to the PV producer for 2012 is expected to be $75/SREC credit. Payments that will be received from the PV producer will change from year to year dependent upon supply and demand. Renewable Energy Consultants is a third party SREC broker that has been approved by the New Jersey Clean Energy Program. As stated above there is no definitive way to calculate an exact price that will be received by the PV producer per SREC over the next 15 years. Renewable Energy Consultants estimated an average of $75/ SREC per year and this number was utilized in the cash flow for this report.

The system costs for PV installations were derived from contractor budgetary pricing in the state of New Jersey for estimates of total cost of system installation. It should be noted that the cost of installation is currently about $4.00 per watt or $4,000 per kW of installed system. Other cost considerations will also need to be considered. PV panels have an approximate 20 year life span; however, the inverter device that converts DC electricity to AC has a life span of 10 to 12 years and will need to be replaced multiple times during the useful life of the PV system.

Due to space requirements this measure was not considered for this facility.

6.1.2 Solar Thermal Hot Water Plant

Active solar thermal systems use solar collectors to gather the sun's energy to heat water, another fluid, or air. An absorber in the collector converts the sun's energy into

heat. The heat is then transferred by circulating water, antifreeze, or sometimes air to another location for immediate use or storage for later utilization. Applications for active solar thermal energy include providing hot water, heating swimming pools, space heating, and preheating air in residential and commercial buildings.

A standard solar hot water system is typically composed of solar collectors, heat storage vessel, piping, circulators, and controls. Systems are typically integrated to work alongside a conventional heating system that provides heat when solar resources are not sufficient. The solar collectors are usually placed on the roof of the building, oriented south, and tilted around the site's latitude, to maximize the amount of radiation collected on a yearly basis.

Several options exist for using active solar thermal systems for space heating. The most common method involves using glazed collectors to heat a liquid held in a storage tank (similar to an active solar hot water system). The most practical system would transfer the heat from the panels to thermal storage tanks and transfer solar produced thermal energy to use for domestic hot water production. DHW is presently produced by gas-fired water heaters and, therefore, this measure would offer natural gas utility savings.

6.2 Demand Response Curtailment

Presently, Electricity is delivered by Public Service Electric and Gas (PSE&G), which receives the electricity from regional power grid RFC. PSE&G is the regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia including the State of New Jersey.

Utility Curtailment is an agreement with the utility provider's regional transmission organization and an approved Curtailment Service Provider (CSP) to shed electrical load by either turning major equipment off or energizing all or part of a facility utilizing an emergency generator; therefore, reducing the electrical demand on the utility grid. This program is to benefit the utility company during high demand periods and utility provider offers incentives to the CSP to participate in this program. Enrolling in the program will require program participants to drop electrical load or turn on emergency generators during high electrical demand conditions or during emergencies. Part of the program also will require that program participants reduce their required load or run emergency generators with notice to test the system.

A pre-approved CSP will require a minimum of 100 kW of load reduction to participate in any curtailment program. From September 2011 through August 2012 the facility had a peak electricity demand of 370.0 kW and a minimum of 244.0 kW. The monthly average over the observed 12 month period was 309.8 kW.

This measure is not recommended.

7.0 EPA PORTFOLIO MANAGER

The EPA Portfolio Manager benchmarking tool was used to assess the building's energy performance. Portfolio Manager provides a site and source Energy Use Intensity (EUI), as well as an Energy Star performance rating for qualifying building types. The EUIs are provided in kBtu/gpd, and the performance rating represents how energy efficient a building is on a scale of 1 to 100, with 100 being the most efficient. In order for a building to receive and Energy Star label, the energy benchmark rating must be at least 75. As energy use decreases from implementation of the proposed measures, the Energy Star rating will increase.

The site EUI is the amount of heat and electricity consumed by a building as reflected in utility bills. Site energy may be delivered to a facility in the form of primary energy, which is raw fuel burned to create heat or electricity, such as natural gas or oil; or as secondary energy, which is the product created from a raw fuel such as electricity or district steam. To provide an equitable comparison for different buildings with varying proportions of primary and secondary energy consumption, Portfolio Manager uses the convention of source EUIs. The source energy also accounts for losses incurred in production, storage, transmission, and delivery of energy to the site, which provide an equivalent measure for various types of buildings with differing energy sources. The results of the Portfolio Manager benchmarking tool are contained in the table below.

Building	Site EUI kBtu/gpd	Source EUI Btu/gpd	Energy Star Rating (1-100)
Park Avenue Water Treatment Plant	0	N/A	N/A

This type of building is not eligible for an energy performance rating.

The Portfolio Manager account can be accessed by entering the username and password shown below at the login screen of the Portfolio Manager website (https://www.energystar.gov/istar/pmpam/).

Username: [redacted]
Password: [redacted]

A full EPA Energy Star Portfolio Manager Report is located in Appendix G.

The user name and password for the building's EPA Portfolio Manager Account has been provided to Richard F. Spafford, P.E., Engineering Director.

8.0 CONCLUSIONS & RECOMMENDATIONS

The LGEA energy audit conducted by CHA at the Park Ave Water Treatment Plant identified potential annual savings of $800 may be realized for the recommended ECMs, with a summary of the costs, savings, and paybacks as follows:

Summary of Energy Conservation Measures							
Energy Conservation Measure		**Approx. Costs ($)**	**Approx. Savings ($/year)**	**Payback (Years) w/o Incentive**	**Potential Incentive ($)***	**Payback (Years) w/ Incentive**	**Recommended**
ECM 6	Lighting Replacement s with Lighting Controls	8,000	800	10.0	900	8.9	X

APPENDIX A

Utility Usage Analysis

Merchantville-Pennsauken Water Commission LGEA
8790 Park Ave, Woodbine, NJ 08109

Annual Utilities

12-month Summary

Electric		
Annual Usage	2,065,000	kWh/yr
Annual Cost	271,010	$
Blended Rate	0.148	$/kWh
Consumption Rate	0.130	$/kWh
Demand Rate	6.90	$/kW
Peak Demand	370.0	kW
Min. Demand	244.0	kW
Avg. Demand	309.8	kW
Natural Gas		
Annual Usage	7,718	Therms/yr
Annual Cost	3,494	$
Rate	0.453	$/Therms

Merchantville-Pennsauken Water Commission LGEA
8790 Park Ave, Woodbine, NJ 08109

Utility Bills: Account Numbers

Account Number	School Building	Location	Type	Notes
7013085308	Park Ave Water Treatment	8790 Park Ave, Woodbine, NJ 08109	Electricity	
4200186500	Park Ave Water Treatment	8790 Park Ave, Woodbine, NJ 08109	Electricity	
4200186500	Park Ave Water Treatment	8790 Park Ave, Woodbine, NJ 08109	Natural Gas	

Merchantville-Pennsauken Water Commission LGEA
8790 Park Ave, Woodbine, NJ 08109

For Service at: **Park Ave Water Treatment Plant**
Account No.: **7013085308** **Delivery -** PSE&G
Meter No.: **226026964** **Supplier -** Reliant Energy Northeast LLC
Electric Service

			Provider Charges			Usage (kWh) vs. Demand (kW) Charges		Unit Costs		
Month	**Consumption (kWh)**	**Demand (kW)**	**Delivery ($)**	**Supplier ($)**	**Total ($)**	**Consumption ($)**	**Demand ($)**	**Blended Rate ($/kWh)**	**Consumption ($/kWh)**	**Demand ($/kW)**
September-11	426	1.00	32.48	36.21	68.69	56.59	12.10	0.16	0.13	12.10
October-11	450	1.10	23.04	38.25	61.29	56.63	4.66	0.14	0.13	4.24
November-11	288	1.00	17.59	24.48	42.07	37.83	4.24	0.15	0.13	4.24
December-11	402	1.30	23.28	34.17	57.45	51.58	5.87	0.14	0.13	4.52
January-12	378	1.00	20.61	32.13	52.74	48.51	4.23	0.14	0.13	4.23
February-12					0.00	0.00		#DIV/0!	#DIV/0!	#DIV/0!
March-12	444	1.70	25.82	41.39	67.21	60.01	7.20	0.15	0.14	4.24
April-12	414	1.60	24.43	38.58	63.01	56.23	6.78	0.15	0.14	4.24
May-12	384	1.20	21.77	35.79	57.56	52.48	5.08	0.15	0.14	4.23
June-12	438	2.10	46.66	40.83	87.49	62.08	25.41	0.20	0.14	12.10
July-12					0.00	0.00		#DIV/0!	#DIV/0!	#DIV/0!
August-12	576	2.40	56.50	82.11	138.61	109.57	29.04	0.24	0.19	12.10
Total (All)	**4,200**	**2.40**	**$292.18**	**$403.94**	**$696.12**	**$591.51**	**$104.61**	**$0.17**	**$0.14**	**$7.26**
Total (last 12-months)	**4,200**	**2.40**	**$292.18**	**$403.94**	**$696.12**	**$591.51**	**$104.61**	**$0.17**	**$0.14**	**$7.26**
Notes	1	2	3	4	5	6	7	8	9	10

1.) Number of kWh of electric energy used per month
2.) Number of kW of power measured
3.) Electric charges from Delivery provider
4.) Electric charges from Supply provider
5.) Total charges (Delivery + Supplier)
6.) Charges based on the number of kWh of electric energy used
7.) Charges based on the number of kW of power measured
8.) Total Charges ($) / Consumption (kWh)
9.) Consumption Charges ($) / Consumption (kWh)
10.) Demand Charges ($) / Demand (kW)

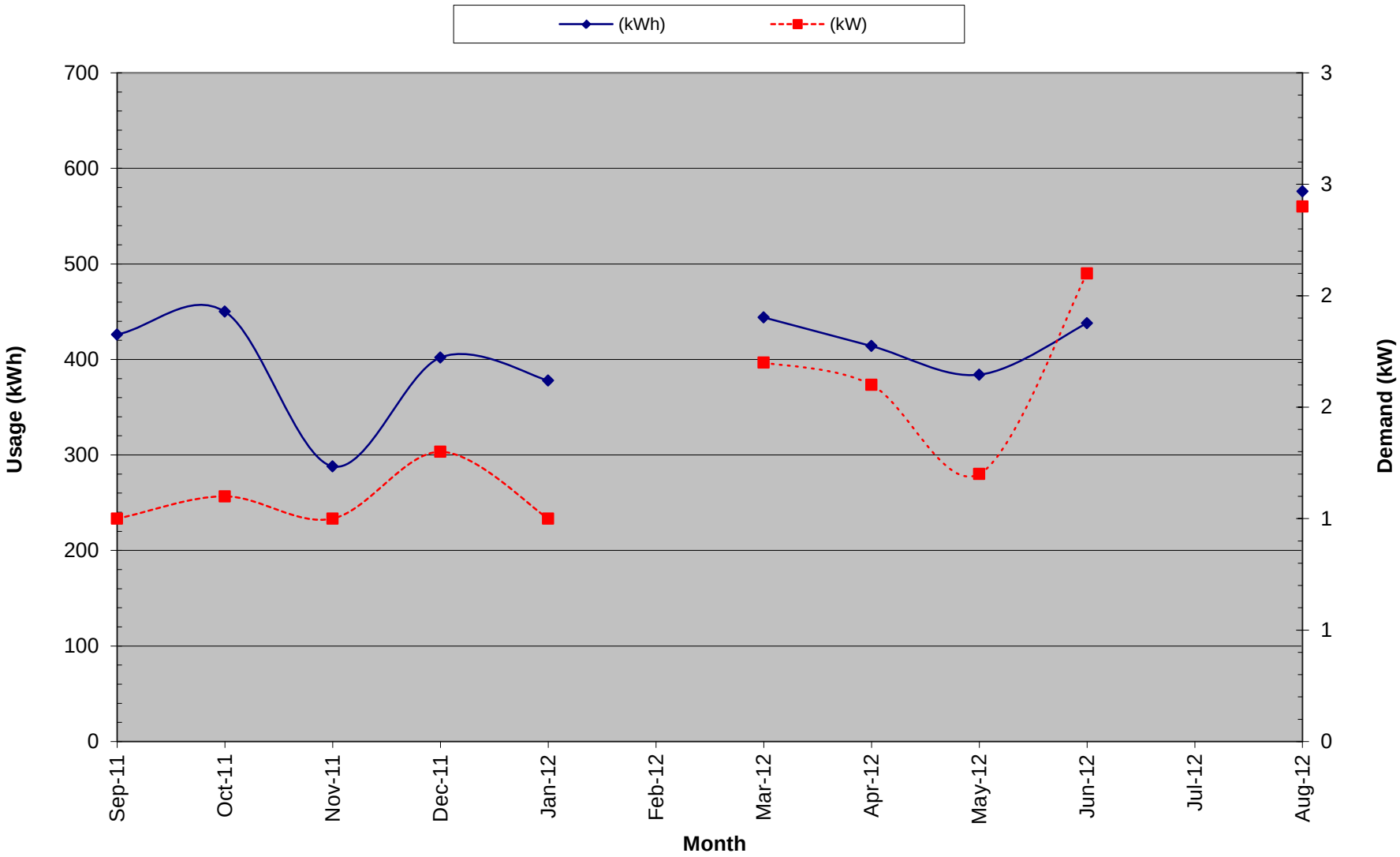
Merchantville-Pennsauken Water Commission LGEA
8790 Park Ave, Woodbine, NJ 08109

For Service at: **Park Ave Water Treatment Plant**
Account No.: **4200186500** **Delivery -** PSE&G
Meter No.: **778019438** **Supplier -** Reliant Energy Northeast LLC
Electric Service

			Provider Charges			Usage (kWh) vs. Demand (kW) Charges		Unit Costs		
Month	**Consumption (kWh)**	**Demand (kW)**	**Delivery ($)**	**Supplier ($)**	**Total ($)**	**Consumption ($)**	**Demand ($)**	**Blended Rate ($/kWh)**	**Consumption ($/kWh)**	**Demand ($/kW)**
September-11	161,600	316.00	8,418.55	13,736.00	22,154.55	18,481.39	3,673.16	0.14	0.11	11.62
October-11	168,400	304.00	5,988.83	14,314.00	20,302.83	19,242.90	1,059.93	0.12	0.11	3.49
November-11	146,400	258.00	5,240.16	12,444.00	17,684.16	16,784.62	899.54	0.12	0.11	3.49
December-11	134,600	244.00	4,938.60	11,441.00	16,379.60	15,528.87	850.73	0.12	0.12	3.49
January-12	131,400	292.00	5,029.96	12,247.80	17,277.76	16,259.67	1,018.09	0.13	0.12	3.49
February-12	139,800	292.00	5,327.72	13,030.76	18,358.48	17,340.40	1,018.08	0.13	0.12	3.49
March-12	175,400	290.00	6,320.26	16,349.03	22,669.29	21,658.17	1,011.12	0.13	0.12	3.49
April-12	172,800	336.00	6,407.65	16,106.69	22,514.34	21,342.84	1,171.50	0.13	0.12	3.49
May-12	192,200	326.00	6,917.46	17,914.97	24,832.43	23,695.80	1,136.63	0.13	0.12	3.49
June-12	211,400	330.00	10,207.75	19,704.60	29,912.35	26,024.49	3,887.86	0.14	0.12	11.78
July-12	214,400	370.00	11,032.76	18,224.00	29,256.76	24,947.41	4,309.35	0.14	0.12	11.65
August-12	212,400	360.00	10,917.32	18,054.00	28,971.32	24,730.01	4,241.31	0.14	0.12	11.78
Total (All)	**2,060,800**	**370.00**	**$86,747.02**	**$183,566.85**	**$270,313.87**	**$246,036.57**	**$24,277.30**	**$0.13**	**$0.12**	**$6.53**
Total (last 12-months)	**2,060,800**	**370.00**	**$86,747.02**	**$183,566.85**	**$270,313.87**	**$246,036.57**	**$24,277.30**	**$0.13**	**$0.12**	**$6.53**
Notes	1	2	3	4	5	6	7	8	9	10

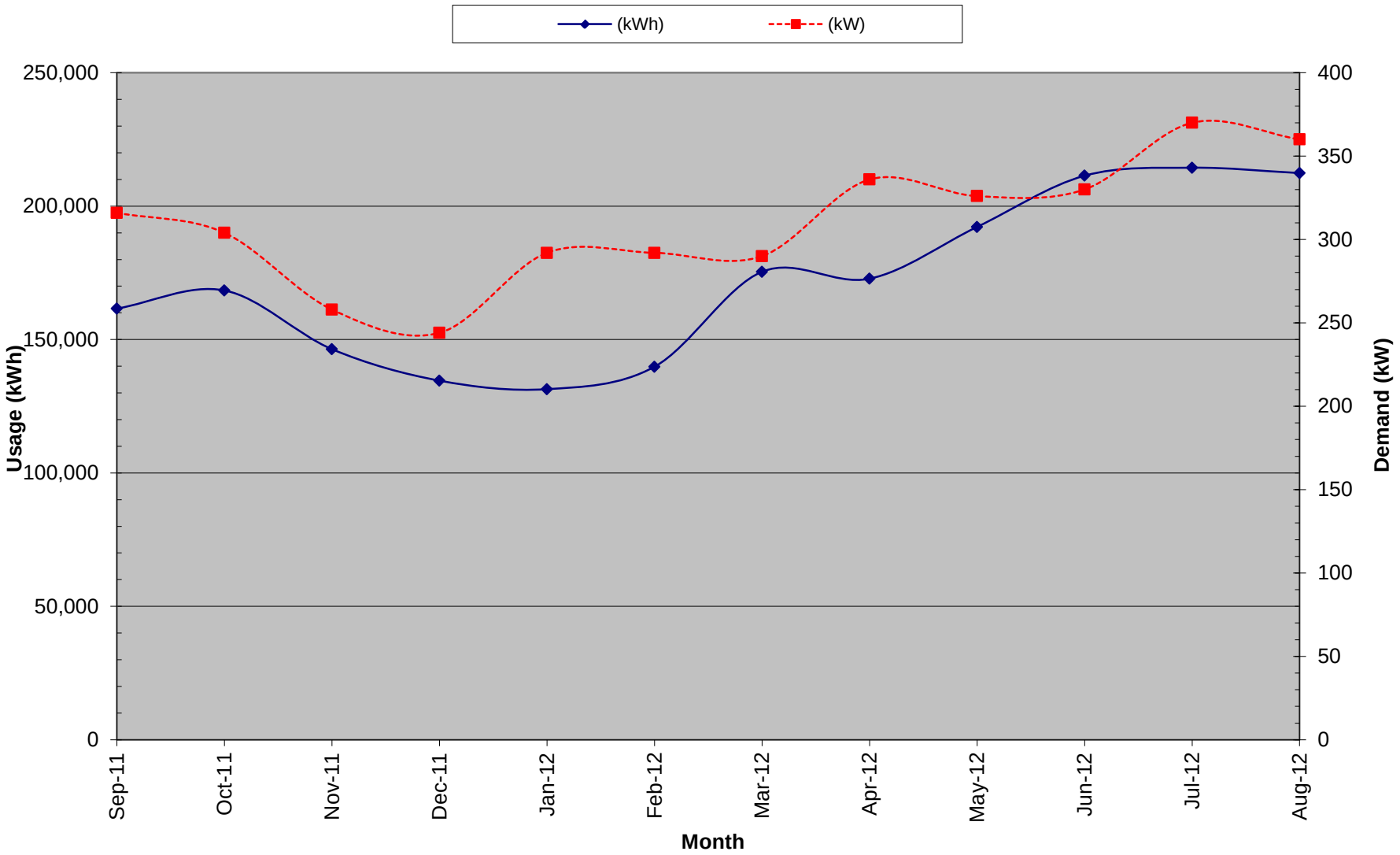
1.) Number of kWh of electric energy used per month
2.) Number of kW of power measured
3.) Electric charges from Delivery provider
4.) Electric charges from Supply provider
5.) Total charges (Delivery + Supplier)
6.) Charges based on the number of kWh of electric energy used
7.) Charges based on the number of kW of power measured
8.) Total Charges ($) / Consumption (kWh)
9.) Consumption Charges ($) / Consumption (kWh)
10.) Demand Charges ($) / Demand (kW)

Electric Usage - Park Ave Water Treatment



Utility Data - Park Ave
Electric Graph

Electric Usage - Park Ave Water Treatment

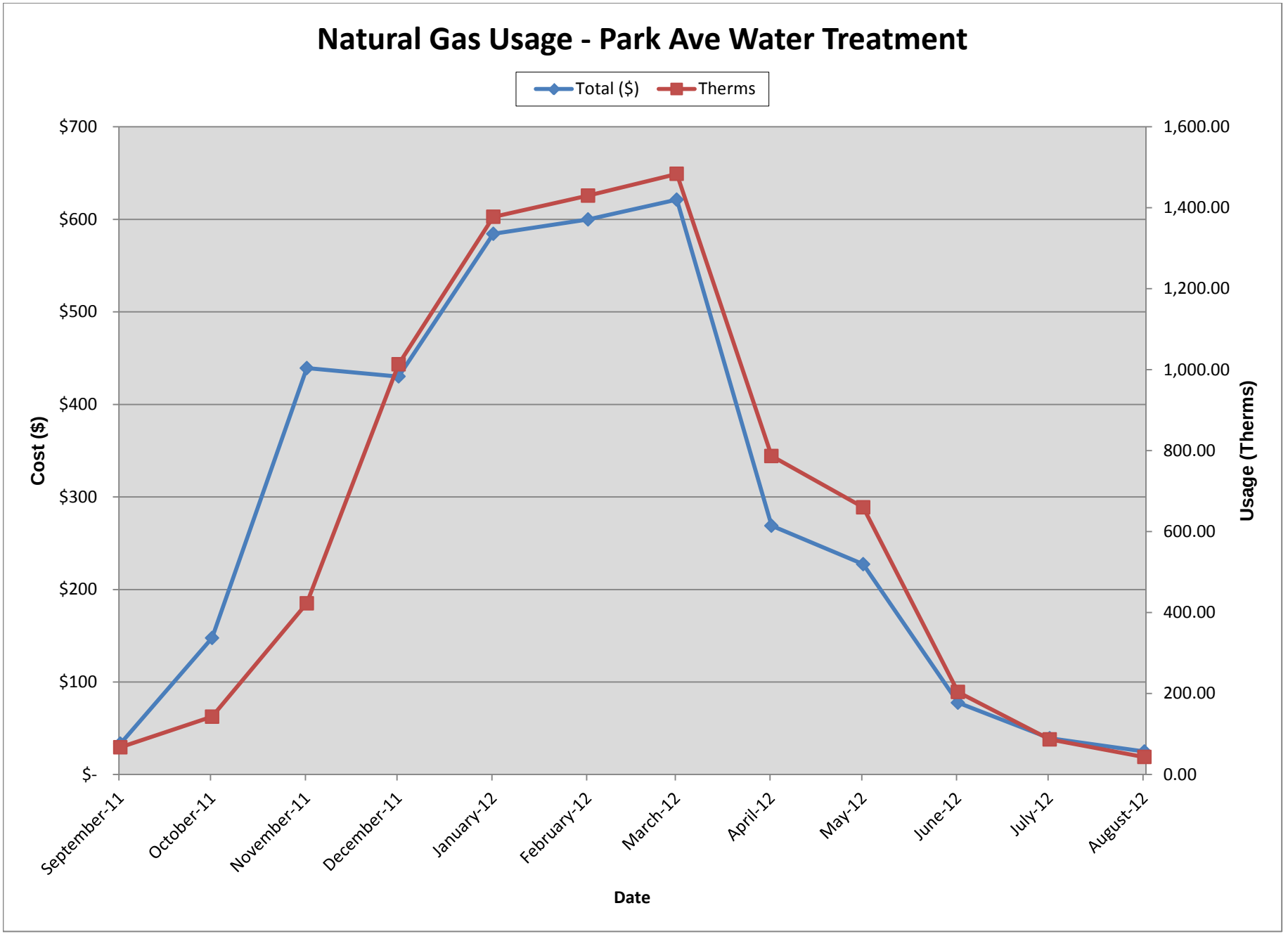


Utility Data - Park Ave
Electric Graph (2)

Merchantville-Pennsauken Water Commission LGEA
8790 Park Ave, Woodbine, NJ 08109

For Service at: **Park Ave Water Treatment Plant**
Account No.: **4200186500**
Meter No: **3216734**
Natural Gas Service
Delivery - **PSE&G**
Supplier - **PSE&G**

Month	Total ($)	Therms	$/Therms
September-11	$ 33.30	67.23	$ 0.50
October-11	$ 147.55	142.87	$ 1.03
November-11	$ 439.20	422.81	$ 1.04
December-11	$ 430.12	1,013.49	$ 0.42
January-12	$ 584.38	1,377.53	$ 0.42
February-12	$ 599.91	1,430.11	$ 0.42
March-12	$ 621.29	1,483.68	$ 0.42
April-12	$ 268.85	786.70	$ 0.34
May-12	$ 227.30	660.05	$ 0.34
June-12	$ 77.64	203.85	$ 0.38
July-12	$ 39.20	86.68	$ 0.45
August-12	$ 24.89	43.07	$ 0.58
Total	**$ 3,493.63**	**7,718.07**	**$ 0.45**


Natural Gas Usage - Park Ave Water Treatment
Total ($)
Therms
$700
$600
$500
$400
$300
$200
$100
$-
Cost ($)
1,600.00
1,400.00
1,200.00
1,000.00
800.00
600.00
400.00
200.00
0.00
Usage (Therms)
September-11
October-11
November-11
December-11
January-12
February-12
March-12
April-12
May-12
June-12
July-12
August-12
Date

APPENDIX B

Equipment Inventory

New Jersey BPU Energy Audit Program
CHA Project #24770
Merchantville-Pennsauken Water Commission - NJBPU
Park Avenue Water Treatment Plant

Description	QTY	Manufacturer Name	Model No.	Serial No.	Equipment Type / Utility	Capacity/Size/Efficiency	Location	Areas/Equipment Served	Date Installed	Remaining Useful Life (years)	Other Info.
DHW	2	Bradford White	MIITW75T6BN12	#1: ZH3599110 #2: ZJ3632106	Hot Water / NG	75 gallon, 76,000 btu/hr, 80%	Mechanical Room	Main Building	2004	4	
B-1	1	Lochinvar	RBN399	J03H00159009	Hot Water / NG	input 399,000 btu/hr, output 327180, 82%	Mechanical Room	Main Building	2004	17	
P-1, P-2	2	Layne	-	-	Water / Electrictiy	40 HP, 94.5%	Outside	Facility	-	-	Well Pumps
P-3, P-4	2	Layne	-	-	Water / Electrictiy	50 HP, 94.5%	Outside	Facility	-	-	Well Pumps
P-5	1	Layne	-	-	Water / Electrictiy	60 HP, 95%	Outside	Facility	--	-	Well Pumps
P-6, P-7	2	Baldor	-	-	Water / Electrictiy	250 HP, 95.8%	Outside	Facility	-	-	High Service Pumps. On VFDs. Runs in Series
UH	1	Reznor	UDAP30	BCD79X7N33881X	Heating / NG	Input 30,000 btu/hr, output 24,600 btu/hr	Mechanical Room	Mechanical Room	2003	3	
UH	2	Berko	-	-	Heating / Electric	120V	HSP House	HSP House	2003	3	
AC Wall Unit	1	Electrolux	GAM155Q1A1	KK6502759	Condenser / DX	15,100 btu/hr	HSP House	HSP House	2006	6	
CU-1	1	York	H5CE090A6A	(5)NMM132471	Condenser / DX	R-22, 7.5 TON	Outside	Conference Room	2004	12	
CU-2	1	York	H4DB060506A	WLMM030516	Condenser / DX	R-22, 5-TON	Outside	Kitchen	2004	12	
CU-3	1	York	H5DB048506A	WNMM000809	Condenser / DX	R-22, 4-TON	Outside	Office	2004	12	
CU-4	1	York	H4DB030506A	WNMM0155553	Condenser / DX	R-22, 2.5-TON	Outside	Office	2004	12	
AHU	4	-	-	-	Heating Hot Water	7.5 Ton, 5-ton, 4-ton, 2.5-ton	Ceiling	offices, conference room, locker rooms	2004	12	No Namplate data

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
Existing Lighting

Cost of Electricity: **$0.130** **$/kWh**
$6.90 **$/kW**

			EXISTING CONDITIONS										
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Retrofit Control	Annual kWh	
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)	Notes
13	Pump Room	Mechanical Room	12	S 32 P F 2 (ELE)	F42LL	60	0.72	SW	1000	NONE	720	
231	Exterior Of Building	Outdoor Lighting	4	WP400MH1	MH400/1	458	1.83	SW	4368	NONE	8,002	
140	Main plant Floor	Main Floor	23	MH 175	MH175/1	215	4.95	SW	260	NONE	1,286	
13	Main plant Floor	Classrooms	5	S 32 P F 2 (ELE)	F42LL	60	0.30	SW	3000	C-OCC	900	
7	Office	Offices	9	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.54	C-OCC	2080	NONE	1,123	
13	Mech Room	Mechanical Room	4	S 32 P F 2 (ELE)	F42LL	60	0.24	C-OCC	1000	NONE	240	
196	Office	Offices	2	W 32 C F 4 (ELE)	F44ILL	112	0.22	SW	2080	C-OCC	466	
7	Corridor	Hallways	8	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.48	C-OCC	3000	NONE	1,440	
7	Conference Room	Offices	12	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.72	C-OCC	2080	NONE	1,498	
7	Locker Vestibule	Hallways	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.06	C-OCC	3000	NONE	180	
7	Locker Vestibule	Hallways	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.06	C-OCC	3000	NONE	180	
196	Men's Locker Room	Locker	6	W 32 C F 4 (ELE)	F44ILL	112	0.67	C-OCC	2080	NONE	1,398	
1	Janitor Closet	Storage Areas	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.03	SW	1000	C-OCC	31	
196	Men's TR	Bath Room	2	W 32 C F 4 (ELE)	F44ILL	112	0.22	C-OCC	1600	NONE	358	
196	Women's TR	Bath Room	2	W 32 C F 4 (ELE)	F44ILL	112	0.22	C-OCC	1600	NONE	358	
196	Women's Locker Room	Locker	1	W 32 C F 4 (ELE)	F44ILL	112	0.11	C-OCC	2080	NONE	233	
7	Kitchen	Break/Lunch Rooms	6	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.36	C-OCC	2080	NONE	749	

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
Existing Lighting

Cost of Electricity: $0.130 $/kWh
$6.90 $/kW

			EXISTING CONDITIONS										
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Retrofit Control	Annual kWh	
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)	Notes

APPENDIX C

ECM Calculations

Summary of Energy Conservation Measures							
Energy Conservation Measure		**Approx. Costs ($)**	**Approx. Savings ($/year)**	**Payback (Years) w/o Incentive**	**Potential Incentive ($)***	**Payback (Years) w/ Incentive**	**Recommended For Implementation**
ECM-1	Replace Boiler with Condensing Boiler	40,000	400	>20	400	>20	
ECM-2	Replace Window AC Unit with Ductless Split System	3,000	30	>20	100	>20	
ECM-3	Replace DWH w/ Tankless Instantaneous Unit	9,000	100	>20	600	>20	
ECM-4	Lighting Replacement / Upgrades	7,000	500	14.0	400	13.2	
ECM-5	Install Lighting Controls (Occupancy Sensors)	1,000	500	2.0	500	1.0	X
ECM-6	Lighting Replacements with Lighting Controls (Occupancy Sensors)	8,000	800	10.0	900	8.9	X

Merchantville-Pennsauken Water Commission - NJBPU
CHA Project #24770
Park Avenue Water Treatment Plant

ECM Summary Sheet

ECM-1 Replace Boiler with Condensing Boiler

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
40,000	0	0	800	400	0	400	(0.9)	400	>20	>20

ECM-2 Replace Window AC Unit with Ductless Split System

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
3,000	200	0	0	30	0	30	(0.9)	100	>20	>20

ECM-3 Replace DWH w/ Tankless Instantaneous Unit

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
9,000	0	0	200	100	0	100	(0.9)	600	>20	>20

ECM-4 Lighting Replacement / Upgrades

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
7,000	3,100	1.5	0	500	0	500	0.1	400	14.0	13.2

ECM-5 Install Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
1,000	3,700	0	0	500	0	500	12.7	500	2.0	1.0

ECM-6 Lighting Replacements with Lighting Controls (Occupancy Sensors)

Budgetary Cost	Annual Utility Savings				Estimated Maintenance Savings	Total Savings	ROI	Incentive *	Payback (without incentive)	Payback (with incentive)
	Electric	Electric	Nat Gas	Total						
$	kWh	kW	Therms	$	$	$		$	Years	Years
8,000	5,600	1.5	0	800	0	800	0.6	900	10.0	8.9

Merchantville-Pennsauken Water Commission - NJBPU
CHA Project #24770

Utility Costs		Yearly Usage	MTCDE	Building Area	Annual Utility Cost	
$ 0.15	$/kWh blended		0.00042021	2,500	Electric	Natural Gas
$ 0.13	$/kWh supply	2,065,000	0.00042021		$271,010	$15,958
$ 6.90	$/kW	370.00	0			
$ 0.45	$/Therm	7,718	0.00533471			
	$/kgals		0			

Park Avenue Water Treatment Plant

	Item	Savings						Cost	Simple Payback	MTCDE	Life Expectancy	NJ Smart Start Incentives	Direct Install Eligible (Y/N)*	Direct Install Incentives**	Max Incentives	Payback w/ Incentives***	Simple Projected Lifetime Savings						ROI
		kW	kWh	therms	cooling kWh	kgal/yr	$										kW	kWh	therms	cooling	kgal/yr	$	
ECM-1	Replace Boiler with Condensing Boiler	0.0	0	783	0	0	$ 400	$ 40,000	100.0	4.2	15	$ 400	Y	$ 28,000	$ 400	99.0	0.0	0	11,741	0	0	$ 5,315	(0.9)
ECM-2	Replace Window AC Unit with Ductless Split System	0.0	0	0	205	0	$ 30	$ 3,000	100.0	0.1	12	$ 138	Y	$ 2,100	$ 138	95.4	0.0	0	0	2,460	0	$ 365	(0.9)
ECM-3	Replace DWH w/ Tankless Instantaneous Unit	0.0	0	229	0	0	$ 100	$ 9,200	92.0	1.2	12	$ 600	Y	$ 6,400	$ 600	86.0	0.0	0	2,745	0	0	$ 1,242	(0.9)
ECM-4	Lighting Replacement / Upgrades	1.5	3,100	0	0	0	$ 500	$ 7,400	14.8	1.3	15	$ 400	Y	$ 5,200	$ 400	14.0	21.9	46,504	0	0	0	$ 7,862	0.1
ECM-5	Install Lighting Controls (Occupancy Sensors)	0.0	3,695	0	0	0	$ 500	$ 600	1.2	1.6	15	$ 500	Y	$ 400	$ 500	0.2	0.0	55,432	0	0	0	$ 8,229	12.7
ECM-6	Lighting Replacements with Lighting Controls (Occupancy Sensors)	1.5	5,572	0	0	0	$ 800	$ 8,000	10.0	2.3	15	$ 900	Y	$ 5,600	$ 900	8.9	21.9	83,584	0	0	0	$ 12,687	0.6
	Total (Does Not Include ECM-4 & ECM-5)	**0.0**	**3,695**	**1,011**	**205**	**0**	**$ 1,030**	**$ 52,800**	51.3		14	$ 1,638		$ 36,900	$ 1,638	49.7	0.0	55,432	14,486	2,460	0	$ 15,151	(0.7)
	Total Measures with Payback <15	**0.0**	**3,695**	**0**	**0**	**0**	**$ 500**	**$ 600**	1.2		15	$ 500		$ 400	$ 500	0.2	0.000	55,432	0	0	0	$ 8,229	12.7

ECM-2: Boiler Replacement

Existing Fuel Nat.Gas

Proposed Fuel Nat.Gas

Item	Value	Units	Formula/Comments
Baseline Fuel Cost	$ 0.45	/ Therm	
Proposed Fuel Cost	$ 0.45	/ Therm	
Baseline Fuel Use	7,201	Therms	Based on historical utility data
Existing Boiler Plant Efficiency	82%		Estimated or Measured
Baseline Boiler Load	590,501	Mbtu/yr	Baseline Fuel Use x Existing Efficiency x 100 Mbtu/Therms
Baseline Fuel Cost	$ 3,260		
Proposed Boiler Plant Efficiency	92%		New Boiler Efficiency
Proposed Fuel Use	6,418	Therms	Baseline Boiler Load / Proposed Efficiency / 100 Mbtu/Therms
Proposed Fuel Cost	$ 2,905		

*Note to engineer: Link savings back to summary sheet in appropriate column.

BOILER REPLACEMENT SAVINGS SUMMARY					
	Electric Demand	Electric Usage	Nat Gas Usage	Maint.	Total Cost
	(kW)	(kWh)	(Therms)	($)	($)
Savings	**0**	**0**	**783**	**$0**	**$354**

Multipliers	
Material:	1.10
Labor:	1.35
Equipment:	1.10

ECM-2: Boiler Replacement - Cost

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
Boiler Demolition	1	LS		$1,500.00		$ -	$ 2,025	$ -	$ 2,025	
399 MBH NG Condensing Boiler	1	EA	$ 16,500	$ 2,000		$ 18,150	$ 2,700	$ -	$ 20,850	
Flue Installation	25	LF	$ 90.0	$ 15.00		$ 2,475	$ 506	$ -	$ 2,981	
Miscellaneous Electrical	1	LS	$ 500	$ 250		$ 550	$ 338	$ -	$ 888	
Miscellaneous HW Piping	1	LS	$ 2,000	$ 1,000		$ 2,200	$ 1,350	$ -	$ 3,550	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$	30,294	Subtotal
$	3,029.38	10% Contingency
$	6,664.63	20% Contractor O&P
$	-	
$	**39,988**	**Total**

Merchantville-Pennsauken Water Commission - NJBPU
CHA Project #24770
Park Avenue Water Treatment Plant

ECM3 - Replace Window AC Unit with Ductless Split System

ASSUMPTIONS			Comments
Electric Cost	$0.148	/ kWh	
Average run hours per Week	60	Hours	Unit is manually turned on (even if after hours)
Space Balance Point	55	F	
Space Temperature Setpoint	70	deg F	setpoint
Avg. BTU / Hr Rating of existing AC Unit	15,100	Btu / Hr	(typical size for cooling spaces in this type of building)
Average EER	9.4		

Item	Value	Units	Comments
Total Number of Units	1		
Existing Annual Electric Usage	624	kWh	
Proposed EER	14.0		New Daiken Split System (per manufacturer)
Proposed Annual Electric Usage	419	kWh	Unit will cycle on w/ temp of room. Possible operating time shown below

ANNUAL SAVINGS		
Annual Savings	205	kWh
Annual Cost Savings	$30	

OAT - DB Bin Temp F	Annual Hours	Cooling Hrs at Temp Above balance point	Assumed % of time of operation	Assumed hrs of Operation
97.5	0	0	100%	0
92.5	36	13	88%	11
87.5	123	44	76%	34
82.5	477	170	65%	110
77.5	656	234	53%	124
72.5	742	265	41%	109
67.5	784	0	0%	0
62.5	983	0	0%	0
57.5	625	0	0%	0
52.5	438	0	0%	0
47.5	559	0	0%	0
42.5	671	0	0%	0
37.5	1,067	0	0%	0
32.5	685	0	0%	0
27.5	369	0	0%	0
22.5	321	0	0%	0
17.5	184	0	0%	0
12.5	40	0	0%	0
7.5	0	0	0%	0
2.5	0	0	0%	0
-2.5	0	0	0%	0
-7.5	0	0	0%	0
-12.5	0	0	0%	0
Total	8,760	726	53%	388

Multipliers	
Material:	1.10
Labor:	1.35
Equipment:	1.10

ECM-4: Replace Window AC Units with Ductless split units - Cost

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
12,000 MBH Split System	1	EA	$ 765	$ 445		$ 842	$ 601	$ -	$ 1,442	
Piping	1	EA	$ 250	$ 500		$ 275	$ 675	$ -	$ 950	
						$ -	$ -	$ -	$ -	

Note: costs are for calculation purposes only - do not use for procurment purposes

$	2,392	Subtotal
$	239	10% Contingency
$	395	15% Contractor O&P
$	-	Engineering
$	**3,026**	**Total**

ECM-4: Replace DWH w/ Tankless Instantaneous Unit

Summary

Item	Value	Units	Formula/Comments
Avg. Monthly Utility Demand by Water Heater	**43**	Therms/month	Calculated from utility bill
Total Annual Utility Demand by Water Heater	51,684	MBTU/yr	1therm = 100 MBTU
Existing DHW Heater Efficiency	80%		Per manufacturer nameplate
Total Annual Hot Water Demand (w/ standby losses)	41,347	MBTU/yr	
Existing Tank Size	150	Gallons	Per manufacturer nameplate
Hot Water Piping System Capacity	100	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	Per building personnel
Room Temperature	70	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	2.6	MBH	
Annual Standby Hot Water Load	22,813	MBTU/yr	
New Tank Size	0	Gallons	Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Hot Water Piping System Capacity	100	Gallons	Estimated Per existing system (includes HWR piping)
Hot Water Temperature	120	˚F	
Room Temperature	70	˚F	
Standby Losses (% by Volume)	2.5%		(2.5% of stored capacity per hour, per U.S. Department of Energy)
Standby Losses (Heat Loss)	1.0	MBH	
Annual Standby Hot Water Load	9,125	MBTU/yr	
Total Annual Hot Water Demand	27,660	MBTU/yr	
Proposed Avg. Hot water heater efficiency	96%		Based on Takagi Flash T-H1 instantaneous, condensing DHW Heater
Proposed Fuel Use	288	Therms	Standby Losses and inefficient DHW heater eliminated
Utility Cost	$0.45	$/Therm	
Existing Operating Cost of DHW	$234	$/yr	
Proposed Operating Cost of DHW	$130	$/yr	

Savings Summary:

Utility	Energy Savings	Cost Savings
Therms/yr	229	$104

Multipliers	
Material:	1.10
Labor:	1.35
Equipment:	1.10

ECM-4: Replace DWH w/ Tankless Instantaneous Unit - Cost

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
Gas-Fired DHW Heater Removal	2	LS		$ 50		$ -	$ 135	$ -	$ 135	
High Efficiency Tankless Gas-Fired DHW Heater	2	LS	$ 1,000	$ 280		$ 2,200	$ 756	$ -	$ 2,956	
Miscellaneous Electrical	2	LS	$ 300			$ 660	$ -	$ -	$ 660	
Venting Kit	2	EA	$ 450	$ 650		$ 990	$ 1,755	$ -	$ 2,745	
Miscellaneous Piping and Valves	2	LS	$ 200			$ 440	$ -	$ -	$ 440	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	
						$ -	$ -	$ -	$ -	

$ 6,936	Subtotal
$ 694	10% Contingency
$ 1,526	20% Contractor O&P
$ -	
$ 9,156	**Total**

New Jersey Pay For Performance Incentive Program

Note: The following calculation is based on the New Jersey Pay For Performance Incentive Program per April, 2012.
Building must have a minimum average electric demand of 100 kW. This minimum is waived for buildings owned by local governments or non-profit organizations.
Values used in this calculation are for measures with a positive return on investment (ROI) only.

Total Building Area (Square Feet)	2,500
Is this audit funded by NJ BPU (Y/N)	Yes

Board of Public Utilites (BPU)

Incentive #1		
Audit is funded by NJ BPU	$0.10	$/sqft

	Annual Utilities	
	kWh	Therms
Existing Cost (from utility)	$271,010	$15,958
Existing Usage (from utility)	2,065,000	7,718
Proposed Savings	3,900	1,011
Existing Total MMBtus	7,820	
Proposed Savings MMBtus	114	
% Energy Reduction	**1.5%**	
Proposed Annual Savings	$500	

	Min (Savings = 15%)		Increase (Savings > 15%)		Max Incentive		Achieved Incentive	
	$/kWh	$/therm	$/kWh	$/therm	$/kWh	$/therm	$/kWh	$/therm
Incentive #2	$0.09	$0.90	$0.005	$0.05	$0.11	$1.25	$0.00	$0.00
Incentive #3	$0.09	$0.90	$0.005	$0.05	$0.11	$1.25	$0.00	$0.00

	Incentives $		
	Elec	Gas	Total
Incentive #1	$0	$0	$5,000
Incentive #2	$0	$0	$0
Incentive #3	$0	$0	$0
Total All Incentives	**$0**	**$0**	**$5,000**

Total Project Cost	$52,800

		Allowable Incentive
% Incentives #1 of Utility Cost*	1.7%	$5,000
% Incentives #2 of Project Cost**	0.0%	$0
% Incentives #3 of Project Cost**	0.0%	$0
Total Eligible Incentives***	**$5,000**	
Project Cost w/ Incentives	$47,800	

Project Payback (years)	
w/o Incentives	w/ Incentives
105.6	95.6

* Maximum allowable incentive is 50% of annual utility cost if not funded by NJ BPU, and %25 if it is.

** Maximum allowable amount of Incentive #2 is 25% of total project cost.

Maximum allowable amount of Incentive #3 is 25% of total project cost.

*** Maximum allowable amount of Incentive #1 is $50,000 if not funded by NJ BPU, and $25,000 if it is.

Maximum allowable amount of Incentive #2 & #3 is $1 million per gas account and $1 million per electric account; maximum 2 million per project

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
Existing Lighting

Cost of Electricity: **$0.130** **$/kWh**
$6.90 **$/kW**

			EXISTING CONDITIONS									
	Area Description	Usage	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Retrofit Control	Annual kWh	
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	Describe Usage Type using Operating Hours	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	Retrofit control device	(kW/space) * (Annual Hours)	Notes
	Total		99				11.74				19,162	

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
ECM-1 Lighting Replacements

		EXISTING CONDITIONS							RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
13	Pump Room	12	S 32 P F 2 (ELE)	F42LL	60	0.7	SW	1000	720	12	0	F42SSILL	48	0.6	SW	1,000	576	144	0.1	$ 30.64	$ 1,377.00	$120	44.9	41.0
231	Exterior Of Building	4	WP400MH1	MH400/1	458	1.8	SW	4368	8,002	4	WP400MH1	MH400/1	458	1.8	SW	4,368	8,002	-	0.0	$ -	$ -	$0		#DIV/0!
140	Main plant Floor	23	MH 175	MH175/1	215	4.9	SW	260	1,286	23	MH 175	MH175/1	215	4.9	SW	260	1,286	-	0.0	$ -	$ -	$0		#DIV/0!
13	Main plant Floor	5	S 32 P F 2 (ELE)	F42LL	60	0.3	SW	3000	900	5	0	F42SSILL	48	0.2	SW	3,000	720	180	0.1	$ 28.37	$ 573.75	$50	20.2	18.5
7	Office	9	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	C-OCC	2080	1,123	9	2T 17 R F 2 (ELE)	F22ILL	33	0.3	C-OCC	2,080	618	505	0.2	$ 85.83	$ 972.00	$90	11.3	10.3
13	Mech Room	4	S 32 P F 2 (ELE)	F42LL	60	0.2	C-OCC	1000	240	4	0	F42SSILL	48	0.2	C-OCC	1,000	192	48	0.0	$ 10.21	$ 459.00	$40	44.9	41.0
196	Office	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	SW	2080	466	2	0	F44SSILL	96	0.2	SW	2,080	399	67	0.0	$ 11.30	$ 283.50	$20	25.1	23.3
7	Corridor	8	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	C-OCC	3000	1,440	8	2T 17 R F 2 (ELE)	F22ILL	33	0.3	C-OCC	3,000	792	648	0.2	$ 102.12	$ 864.00	$80	8.5	7.7
7	Conference Room	12	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.7	C-OCC	2080	1,498	12	2T 17 R F 2 (ELE)	F22ILL	33	0.4	C-OCC	2,080	824	674	0.3	$ 114.44	$ 1,296.00	$120	11.3	10.3
7	Locker Vestibule	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	C-OCC	3000	180	1	2T 17 R F 2 (ELE)	F22ILL	33	0.0	C-OCC	3,000	99	81	0.0	$ 12.77	$ 108.00	$10	8.5	7.7
7	Locker Vestibule	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	C-OCC	3000	180	1	2T 17 R F 2 (ELE)	F22ILL	33	0.0	C-OCC	3,000	99	81	0.0	$ 12.77	$ 108.00	$10	8.5	7.7
196	Men's Locker Room	6	W 32 C F 4 (ELE)	F44ILL	112	0.7	C-OCC	2080	1,398	6	0	F44SSILL	96	0.6	C-OCC	2,080	1,198	200	0.1	$ 33.91	$ 850.50	$60	25.1	23.3
1	Janitor Closet	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.0	SW	1000	31	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.0	SW	1,000	31	-	0.0	$ -	$ -	$0		#DIV/0!
196	Men's TR	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1600	358	2	0	F44SSILL	96	0.2	C-OCC	1,600	307	51	0.0	$ 9.31	$ 283.50	$20	30.5	28.3
196	Women's TR	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1600	358	2	0	F44SSILL	96	0.2	C-OCC	1,600	307	51	0.0	$ 9.31	$ 283.50	$20	30.5	28.3
196	Women's Locker Room	1	W 32 C F 4 (ELE)	F44ILL	112	0.1	C-OCC	2080	233	1	0	F44SSILL	96	0.1	C-OCC	2,080	200	33	0.0	$ 5.65	$ 141.75	$10	25.1	23.3
7	Kitchen	6	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.4	C-OCC	2080	749	6	2T 17 R F 2 (ELE)	F22ILL	33	0.2	C-OCC	2,080	412	337	0.2	$ 57.22	$ 648.00	$60	11.3	10.3

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
ECM-1 Lighting Replacements

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
	Total	99				11.7			19,162	99			1,526	10.3			16,062	3,100	1.5	$524	$8,249	$710		
																		Demand Savings		1.5	$121			
																		kWh Savings		3,100	$403			
																		Total savings			$524		15.7	14.4

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
ECM-2 Install Occupancy Sensors

		EXISTING CONDITIONS							RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
13	Pump Room	12	S 32 P F 2 (ELE)	F42LL	60	0.7	SW	1000	720.0	12	S 32 P F 2 (ELE)	F42LL	60	0.7	NONE	1000	720.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
231	Exterior Of Building	4	WP400MH1	MH400/1	458	1.8	SW	4368	8,002.2	4	WP400MH1	MH400/1	458	1.8	NONE	4368	8,002.2	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
140	Main plant Floor	23	MH 175	MH175/1	215	4.9	SW	260	1,285.7	23	MH 175	MH175/1	215	4.9	NONE	260	1,285.7	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
13	Main plant Floor	5	S 32 P F 2 (ELE)	F42LL	60	0.3	SW	3000	900.0	5	S 32 P F 2 (ELE)	F42LL	60	0.3	C-OCC	1600	480.0	420.0	0.0	$54.60	$270.00	$35.00	4.9	4.3
7	Office	9	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	C-OCC	2080	1,123.2	9	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	NONE	1300	702.0	421.2	0.0	$54.76	$0.00	$0.00	0.0	0.0
13	Mech Room	4	S 32 P F 2 (ELE)	F42LL	60	0.2	C-OCC	1000	240.0	4	S 32 P F 2 (ELE)	F42LL	60	0.2	NONE	1000	240.0	0.0	0.0	$0.00	$0.00	$0.00		#DIV/0!
196	Office	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	SW	2080	465.9	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1300	291.2	174.7	0.0	$22.71	$270.00	$35.00	11.9	10.3
7	Corridor	8	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	C-OCC	3000	1,440.0	8	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	NONE	1600	768.0	672.0	0.0	$87.36	$0.00	$0.00	0.0	0.0
7	Conference Room	12	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.7	C-OCC	2080	1,497.6	12	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.7	NONE	1300	936.0	561.6	0.0	$73.01	$0.00	$0.00	0.0	0.0
7	Locker Vestibule	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	C-OCC	3000	180.0	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	NONE	1600	96.0	84.0	0.0	$10.92	$0.00	$0.00	0.0	0.0
7	Locker Vestibule	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	C-OCC	3000	180.0	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	NONE	1600	96.0	84.0	0.0	$10.92	$0.00	$0.00	0.0	0.0
196	Men's Locker Room	6	W 32 C F 4 (ELE)	F44ILL	112	0.7	C-OCC	2080	1,397.8	6	W 32 C F 4 (ELE)	F44ILL	112	0.7	NONE	1300	873.6	524.2	0.0	$68.14	$0.00	$0.00	0.0	0.0
1	Janitor Closet	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.0	SW	1000	31.0	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.0	C-OCC	250	7.8	23.3	0.0	$3.02	$270.00	$35.00	89.3	77.8
196	Men's TR	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1600	358.4	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	NONE	1000	224.0	134.4	0.0	$17.47	$0.00	$0.00	0.0	0.0
196	Women's TR	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1600	358.4	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	NONE	1000	224.0	134.4	0.0	$17.47	$0.00	$0.00	0.0	0.0
196	Women's Locker Room	1	W 32 C F 4 (ELE)	F44ILL	112	0.1	C-OCC	2080	233.0	1	W 32 C F 4 (ELE)	F44ILL	112	0.1	NONE	1300	145.6	87.4	0.0	$11.36	$0.00	$0.00	0.0	0.0
7	Kitchen	6	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.4	C-OCC	2080	748.8	6	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.4	NONE	1040	374.4	374.4	0.0	$48.67	$0.00	$0.00	0.0	0.0

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
ECM-2 Install Occupancy Sensors

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	"Lighting Fixture Code" Example 2T 40 R F(U) = 2'x2' Troff 40 w Recess. Floor 2 lamps U shape	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kW Saved) * ($/kWh)	Cost for renovations to lighting system		Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
	Total	99				11.7			19,162	99				12			15,466	3,695	0	480	$810	105		
																				0.0	$0			
																				3,695	$480			
																					$480		1.7	1.5

Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
ECM-3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	**No. of Fixtures**	**Standard Fixture Code**	**Fixture Code**	**Watts per Fixture**	**kW/Space**	**Exist Control**	**Annual Hours**	**Annual kWh**	**Number of Fixtures**	**Standard Fixture Code**	**Fixture Code**	**Watts per Fixture**	**kW/Space**	**Retrofit Control**	**Annual Hours**	**Annual kWh**	**Annual kWh Saved**	**Annual kW Saved**	**Annual $ Saved**	**Retrofit Cost**	**NJ Smart Start Lighting Incentive**	**Simple Payback With Out Incentive**	**Simple Payback**
Field Code	**Unique description of the location - Room number/Room name: Floor number (if applicable)**	**No. of fixtures before the retrofit**	**Lighting Fixture Code**	**Code from Table of Standard Fixture Wattages**	**Value from Table of Standard Fixture Wattages**	**(Watts/Fixt) * (Fixt No.)**	**Pre-inst. control device**	**Estimated daily hours for the usage group**	**(kW/space) * (Annual Hours)**	**No. of fixtures after the retrofit**	**Lighting Fixture Code**	**Code from Table of Standard Fixture Wattages**	**Value from Table of Standard Fixture Wattages**	**(Watts/Fixt) * (Number of Fixtures)**	**Retrofit control device**	**Estimated annual hours for the usage group**	**(kW/space) * (Annual Hours)**	**(Original Annual kWh) - (Retrofit Annual kWh)**	**(Original Annual kW) - (Retrofit Annual kW)**	**(kWh Saved) * ($/kWh)**	**Cost for renovations to lighting system**	**Prescriptive Lighting Measures**	**Length of time for renovations cost to be recovered**	**Length of time for renovations cost to be recovered**
13	Pump Room	12	S 32 P F 2 (ELE)	F42LL	60	0.7	SW	1000	720	12	0	F42SSILL	48	0.6	NONE	1,000	576	144	0.1	$ 30.64	$ 1,377.00	$ 120	44.9	41.0
231	Exterior Of Building	4	WP400MH1	MH400/1	458	1.8	SW	4368	8,002	4	WP400MH1	MH400/1	458	1.8	NONE	4,368	8,002	-	0.0	$ -	$ -	$ -		
140	Main plant Floor	23	MH 175	MH175/1	215	4.9	SW	260	1,286	23	MH 175	MH175/1	215	4.9	NONE	260	1,286	-	0.0	$ -	$ -	$ -		
13	Main plant Floor	5	S 32 P F 2 (ELE)	F42LL	60	0.3	SW	3000	900	5	0	F42SSILL	48	0.2	C-OCC	1,600	384	516	0.1	$ 72.05	$ 843.75	$ 85	11.7	10.5
7	Office	9	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	C-OCC	2080	1,123	9	2T 17 R F 2 (ELE)	F22ILL	33	0.3	NONE	1,300	386	737	0.2	$ 115.94	$ 972.00	$ 90	8.4	7.6
13	Mech Room	4	S 32 P F 2 (ELE)	F42LL	60	0.2	C-OCC	1000	240	4	0	F42SSILL	48	0.2	NONE	1,000	192	48	0.0	$ 10.21	$ 459.00	$ 40	44.9	41.0
196	Office	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	SW	2080	466	2	0	F44SSILL	96	0.2	C-OCC	1,300	250	216	0.0	$ 30.77	$ 553.50	$ 55	18.0	16.2
7	Corridor	8	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.5	C-OCC	3000	1,440	8	2T 17 R F 2 (ELE)	F22ILL	33	0.3	NONE	1,600	422	1,018	0.2	$ 150.17	$ 864.00	$ 80	5.8	5.2
7	Conference Room	12	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.7	C-OCC	2080	1,498	12	2T 17 R F 2 (ELE)	F22ILL	33	0.4	NONE	1,300	515	983	0.3	$ 154.59	$ 1,296.00	$ 120	8.4	7.6
7	Locker Vestibule	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	C-OCC	3000	180	1	2T 17 R F 2 (ELE)	F22ILL	33	0.0	NONE	1,600	53	127	0.0	$ 18.77	$ 108.00	$ 10	5.8	5.2
7	Locker Vestibule	1	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.1	C-OCC	3000	180	1	2T 17 R F 2 (ELE)	F22ILL	33	0.0	NONE	1,600	53	127	0.0	$ 18.77	$ 108.00	$ 10	5.8	5.2
196	Men's Locker Room	6	W 32 C F 4 (ELE)	F44ILL	112	0.7	C-OCC	2080	1,398	6	0	F44SSILL	96	0.6	NONE	1,300	749	649	0.1	$ 92.31	$ 850.50	$ 60	9.2	8.6
1	Janitor Closet	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.0	SW	1000	31	1	SQ 13 W CF 2 (MAG)	CFQ13/2	31	0.0	C-OCC	250	8	23	0.0	$ 3.02	$ 270.00	$ 35	89.3	77.8
196	Men's TR	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1600	358	2	0	F44SSILL	96	0.2	NONE	1,000	192	166	0.0	$ 24.28	$ 283.50	$ 20	11.7	10.9
196	Women's TR	2	W 32 C F 4 (ELE)	F44ILL	112	0.2	C-OCC	1600	358	2	0	F44SSILL	96	0.2	NONE	1,000	192	166	0.0	$ 24.28	$ 283.50	$ 20	11.7	10.9
196	Women's Locker Room	1	W 32 C F 4 (ELE)	F44ILL	112	0.1	C-OCC	2080	233	1	0	F44SSILL	96	0.1	NONE	1,300	125	108	0.0	$ 15.39	$ 141.75	$ 10	9.2	8.6
7	Kitchen	6	2T 32 R F 2 (u) (ELE) Thin Tube	FU2LL	60	0.4	C-OCC	2080	749	6	2T 17 R F 2 (ELE)	F22ILL	33	0.2	NONE	1,040	206	543	0.2	$ 83.99	$ 648.00	$ 60	7.7	7.0
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Energy Audit of Park Ave Water Treatment
CHA Project No. 24770
ECM-3 Lighting Replacements with Occupancy Sensors

		EXISTING CONDITIONS								RETROFIT CONDITIONS								COST & SAVINGS ANALYSIS						
	Area Description	No. of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Exist Control	Annual Hours	Annual kWh	Number of Fixtures	Standard Fixture Code	Fixture Code	Watts per Fixture	kW/Space	Retrofit Control	Annual Hours	Annual kWh	Annual kWh Saved	Annual kW Saved	Annual $ Saved	Retrofit Cost	NJ Smart Start Lighting Incentive	Simple Payback With Out Incentive	Simple Payback
Field Code	Unique description of the location - Room number/Room name: Floor number (if applicable)	No. of fixtures before the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Fixt No.)	Pre-inst. control device	Estimated daily hours for the usage group	(kW/space) * (Annual Hours)	No. of fixtures after the retrofit	Lighting Fixture Code	Code from Table of Standard Fixture Wattages	Value from Table of Standard Fixture Wattages	(Watts/Fixt) * (Number of Fixtures)	Retrofit control device	Estimated annual hours for the usage group	(kW/space) * (Annual Hours)	(Original Annual kWh) - (Retrofit Annual kWh)	(Original Annual kW) - (Retrofit Annual kW)	(kWh Saved) * ($/kWh)	Cost for renovations to lighting system	Prescriptive Lighting Measures	Length of time for renovations cost to be recovered	Length of time for renovations cost to be recovered
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S	Total	99				11.7			19,162	99				10.3			13,590		1.5	845	9,059	$815		
S																	Demand Savings			1.5	$121			
S																	kWh Savings			5,572	$724			
S																	Total Savings				$845		10.7	9.8

APPENDIX D

New Jersey Board of Public Utilities Incentives

i. **Smart Start**

ii. **Direct Install**

iii. **Pay for Performance (P4P)**

iv. **Energy Savings Improvement Plan (ESIP)**

I. SMART START

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

PROGRAMS

NJ SMARTSTART BUILDINGS

EQUIPMENT INCENTIVES

APPLICATION FORMS

TOOLS AND RESOURCES

PAY FOR PERFORMANCE

COMBINED HEAT & POWER AND FUEL CELLS

LOCAL GOVERNMENT ENERGY AUDIT

LARGE ENERGY USERS PILOT

ENERGY SAVINGS IMPROVEMENT PROGRAM

DIRECT INSTALL

ENERGY BENCHMARKING

OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS

EDA PROGRAMS

T-12 SCHOOLS LIGHTING INITIATIVE

TEACH

ARRA

TECHNOLOGIES

TOOLS AND RESOURCES

PROGRAM UPDATES

CONTACT US

Home » Commercial & Industrial » Programs

NJ SmartStart Buildings

Program Overview

New Jersey SmartStart BUILDINGS®

With New Jersey SmartStart Buildings ...

... A smart start now means better performance later! Whether you're starting a commercial or industrial project from the ground up, renovating existing space, or upgrading equipment, you have unique opportunities to upgrade the energy efficiency of the project.

New Jersey SmartStart Buildings can provide a range of support — at no cost to you — to yield substantial energy savings, both now and for the future. Learn more about:

- Project Categories
- Custom Measures
- Incentives for Qualifying Equipment and Projects
- Program Terms and Conditions
- Find a Trade Ally

Please note: pre-approval is required for almost all energy efficiency incentives. This means you must submit an application form (and applicable worksheets) and receive an approval letter from the program before any equipment is installed (click here for complete Terms and Conditions.) Upon receipt of an approval letter, you may proceed to install the equipment listed on your approved application. Equipment installed prior to the date of the approval letter is not eligible for an incentive. **Any customer and/or agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

Getting Started

Submit your project application form as soon as you know you will be doing a construction project, or replacing/adding equipment.

Smart-Growth Eligibility: *Check to make sure your project is eligible for incentives.*

Incentives for new construction are available only for projects in areas designated for growth in the NJ State Development and Redevelopment Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for incentives throughout the State.

Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Site Evaluator Tool available from the HMFA website. Contact a program representative if you are uncertain about project eligibility. The Smart Growth policies will be implemented consistent with Board Orders as described more fully in the C&I Operational Procedure Manual.

Apply for pre-approval by submitting an application for the type of equipment you have chosen to install. The application should be accompanied by a related worksheet, where applicable, and a manufacturer's specification sheet (refer to the specific program requirements on the back of the application for specs needed for your project) for the equipment you are planning to install. (Program representatives will review your application package and approve it, reject it, and/or advise you of upgrades in equipment that will save energy costs and/or increase your incentives.)

Support for Custom Energy-Efficiency Measures

Custom measures allows program participants the opportunity to receive an incentive for unique energy-efficiency measures that are not on the prescriptive equipment incentive list, but are project/facility specific.

Incentives for Qualifying Equipment and Projects

Financial incentives are available for large and small projects. These incentives offset some — or maybe even all! — of the added cost to purchase qualifying energy-efficient equipment, which provides significant long-term energy savings. Ranges of incentives are available for qualifying equipment (depending on type, size, and efficiency) in several categories.

Find out more about equipment incentives!

For specific details on equipment requirements and financial incentives, including incentives for equipment not listed here, contact a program representative. Annual financial incentives may be

Program Updates

Notice of 2013 Changes to C&I Programs

Warranty and Lease Terms for CHP/Fuel Cells Increased to 10 Years

Large Combined Heat & Power/Fuel Cell Program Update

Board Order - Standby Charges for Distributed Generation Customers

Other updates posted.

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

- PROGRAMS
  - NJ SMARTSTART BUILDINGS
    - EQUIPMENT INCENTIVES
    - APPLICATION FORMS
    - TOOLS AND RESOURCES
  - PAY FOR PERFORMANCE
  - COMBINED HEAT & POWER AND FUEL CELLS
  - LOCAL GOVERNMENT ENERGY AUDIT
  - LARGE ENERGY USERS PILOT
  - ENERGY SAVINGS IMPROVEMENT PROGRAM
  - DIRECT INSTALL
  - ENERGY BENCHMARKING
  - OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS
  - EDA PROGRAMS
  - T-12 SCHOOLS LIGHTING INITIATIVE
  - TEACH
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Home » Commercial & Industrial » Programs » NJ SmartStart Buildings

Equipment Incentives

More reasons for a smart start on your next project!

New Jersey SmartStart Buildings provides **financial incentives for qualifying equipment**. These incentives were developed to help our customers offset some of the added cost to purchase qualifying energy-efficient equipment, which provides significant long-term energy savings. A wide range of incentives are available for qualifying equipment (depending on type, size and efficiency).

Listed below are the types of qualifying equipment and ranges of incentives. For details on equipment requirements and full listings of incentives, refer to the **online application forms**.

Please note that almost all equipment incentives require pre-approval before equipment is installed. (**click for exceptions**)To start the pre-approval process, submit an Equipment Application, and appropriate Equipment Worksheets, for the type or types of equipment you are planning to install along with equipment specification sheets (refer to the specific program requirements on the back of the application for specifications needed for your project) and a current utility bill(s).

In order to be eligible to receive financial incentives under this Program, Applicants must receive electric and/or gas service from one of the regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

Electric Chillers

- Water-cooled chillers ($12 - $170 per ton)
- Air-cooled chillers ($8 - $52 per ton)

Gas Cooling

- Gas absorption chillers ($185-$450 per ton)
- Gas Engine-Driven Chillers (Calculated through Custom Measure Path)

Desiccant Systems ($1.00 per cfm - gas or electric)

Electric Unitary HVAC

- Unitary AC and split systems ($73 - $92 per ton)
- Air-to-air heat pumps ($73 - $92 per ton)
- Water-source heat pumps ($81 per ton)
- Packaged terminal AC & HP ($65 per ton)
- Central DX AC Systems ($40 - $72 per ton)
- Dual Enthalpy Economizer Controls ($250)
- Occupancy Controlled Thermostats ($75 each)

Ground Source Heat Pumps

- Closed Loop ($450-750 per ton)

Gas Heating

- Gas-fired boilers < 300 MBH ($300 per unit)
- Gas-fired boilers ≥ 300 MBH - 1500 MBH ($1.75 per MBH)
- Gas-fired boilers ≥ 1500 MBH - ≤ 4000 MBH ($1.00 per MBH)
- Gas-fired boilers > 4000 MBH (Calculated through Custom Measure Path)
- Gas furnaces ($300-$400 per unit)

Variable Frequency Drives

- Variable air volume ($65 - $155 per hp)
- Chilled-water pumps ($60 per hp)
- Compressors ($5,250 to $12,500 per drive)

Natural Gas Water Heating

Program Updates

- Notice of 2013 Changes to C&I Programs
- Warranty and Lease Terms for CHP/Fuel Cells Increased to 10 Years
- Large Combined Heat & Power/Fuel Cell Program Update
- Board Order - Standby Charges for Distributed Generation Customers

Other updates posted.

II. DIRECT INSTALL

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

- PROGRAMS
  - NJ SMARTSTART BUILDINGS
  - PAY FOR PERFORMANCE
  - COMBINED HEAT & POWER AND FUEL CELLS
  - LOCAL GOVERNMENT ENERGY AUDIT
  - LARGE ENERGY USERS PILOT
  - ENERGY SAVINGS IMPROVEMENT PROGRAM
  - DIRECT INSTALL
    - PARTICIPATION STEPS
    - PARTICIPATING CONTRACTORS
    - SUSTAINABLE JERSEY
  - ENERGY BENCHMARKING
  - OIL, PROPANE & MUNICIPAL ELECTRIC CUSTOMERS
  - EDA PROGRAMS
  - T-12 SCHOOLS LIGHTING INITIATIVE
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Home » Commercial & Industrial » Programs » Direct Install

Direct Install - Steps to Participation

New Jersey SmartStart BUILDINGS

NEW JERSEY'S CLEAN ENERGY PROGRAM DIRECT Install

SIX SIMPLE STEPS TO PARTICIPATION

CONTACT THE PARTICIPATING CONTRACTOR IN YOUR AREA

Identify the contractor assigned and trained to provide Direct Install services in the county where your project is located. Using the contact information provided, call or send an e-mail to the participating contractor to discuss your project. The contractor will schedule an energy assessment and work with you to complete the program application and participation agreement.

If you're unable to contact the participating contractor or have questions, you may contact us at 866 -NJSMART or send an e-mail to DirectInstall@NJCleanEnergy.com..

REVIEW RESULTS

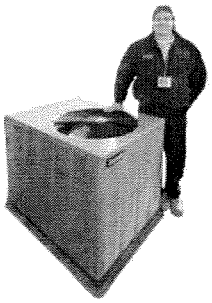
After the energy assessment, the contractor will review the results with you, including what measures qualify and your share of the project cost.

MOVE FORWARD

You will sign a scope of work document to proceed with implementation of qualifying measures.

ARRANGE INSTALLATION

You and the participating contractor will set a convenient start date for the installation.



CONFIRM INSTALLATION

Once the participating contractor completes the installation, you accept the work by signing a project completion form.

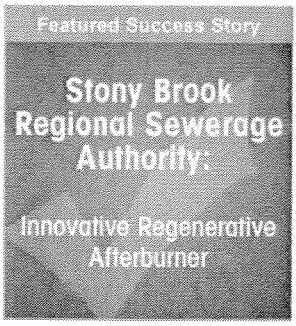
COMPLETE TRANSACTION

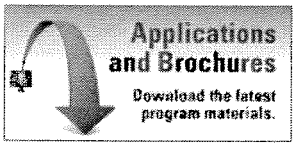
You pay the participating contractor your share of the project cost and New Jersey's Clean Energy Program pays the rest.

Program Updates

- Notice of 2013 Changes to C&I Programs
- Warranty and Lease Terms for CHP/Fuel Cells Increased to 10 Years
- Large Combined Heat & Power/Fuel Cell Program Update
- Board Order - Standby Charges for Distributed Generation Customers

Other updates posted.





Follow Us:

III. PAY FOR PERFORMANCE (P4P)

New Jersey's Clean Energy PROGRAM™
Your Power to Save
njcleanenergy.com

New Jersey SmartStart BUILDINGS®

BPU

2012 PAY FOR PERFORMANCE PROGRAM
Existing Buildings Incentive Structure

Incentive #1: Energy Reduction Plan

Incentive Amount: ..... **$0.10 per sq ft**
Minimum Incentive: **$5,000**
Maximum Incentive:: ..... **$50,000 or 50% of facility annual energy cost (whichever is less)**

This incentive is designed to offset the cost of services associated with the development of the Energy Reduction Plan (ERP) and is paid upon ERP approval. Incentive is contingent on implementation of recommended measures outlined in the ERP.

Incentive #2: Installation of Recommended Measures

Minimum Performance Target: **15%**

Electric Incentives

Base Incentive based on 15% savings: ..... **$0.09 per projected kWh saved**
For each % over 15% add: ..... **$0.005 per projected kWh saved**
Maximum Incentive: ..... **$0.11 per projected kWh saved**

Gas Incentives

Base Incentive based on 15% savings: ..... **$0.90 per projected Therm saved**
For each % over 15% add: ..... **$0.05 per projected Therm saved**
Maximum Incentive: ..... **$1.25 per projected Therm saved**

Incentive Cap: ..... **25% of total project cost**

This incentive is based on projected energy savings outlined in the ERP. Incentive is paid upon successful installation of recommended measures.

Incentive #3: Post-Construction Benchmarking Report

Minimum Performance Target: **15%**

Electric Incentives

Base Incentive based on 15% savings: ..... **$0.09 per actual kWh saved**
For each % over 15% add: ..... **$0.005 per actual kWh saved**
Maximum Incentive: ..... **$0.11 per actual kWh saved**

Gas Incentives

Base Incentive based on 15% savings: ..... **$0.90 per actual Therm saved**
For each % over 15% add: ..... **$0.05 per actual Therm saved**
Maximum Incentive: ..... **$1.25 per actual Therm saved**

Incentive Cap: ..... **25% of total project cost**

This incentive will be released upon submittal of a Post-Construction Benchmarking Report that verifies that the level of savings actually achieved by the installed measures meets or exceeds the minimum performance threshold. To validate the savings and achievement of the Energy Target, the EPA Portfolio Manager shall be used. Savings should be rounded to the nearest percent. Total value of Incentive #2 and Incentive #3 may not exceed 50% of the total project cost. Incentives will be limited to $1 million per gas and electric account per building; maximum of $2 million per project. See Participation Agreement for details.

IV. ENERGY SAVINGS IMPROVEMENT PLAN (ESIP)

COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT

PROGRAMS

- NJ SMARTSTART BUILDINGS
- PAY FOR PERFORMANCE
- COMBINED HEAT & POWER AND FUEL CELLS
- LOCAL GOVERNMENT ENERGY AUDIT
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Energy Savings Improvement Program

A new State law allows government agencies to make energy related improvements to their facilities and pay for the costs using the value of energy savings that result from the improvements. Under the recently enacted Chapter 4 of the Laws of 2009 (the law), the "Energy Savings Improvement Program" (ESIP), provides all government agencies in New Jersey with a flexible tool to improve and reduce energy usage with minimal expenditure of new financial resources.

This Local Finance Notice outlines how local governments can develop and implement an ESIP for their facilities. Below are two sample RFPs:

Local Government
School Districts (K-12)

The Board also adopted protocols to measure energy savings.

The ESIP approach may not be appropriate for all energy conservation and energy efficiency improvements. Local units should carefully consider all alternatives to develop an approach that best meets their needs. Local units considering an ESIP should carefully review the Local Finance Notice, the law, and consult with qualified professionals to determine how they should approach the task.

FIRST STEP – ENERGY AUDIT

For local governments interested in pursuing an ESIP, the first step is to perform an energy audit. As explained in the Local Finance Notice, this may be done internally if an agency has qualified staff to conduct the audit. If not, the audit must be implemented by an independent contractor and not by the energy savings company producing the Energy Reduction Plan.

Pursuing a Local Government Energy Audit through New Jersey's Clean Energy Program is a valuable first step to the ESIP approach - and it's free. **Incentives provide 100% of the cost of the audit.**

ENERGY REDUCTION PLANS

If you have an ESIP plan you would like to submit to the Board of Public Utilities, please email it to ESIP@bpu.state.nj.us. Please limit the file size to 3MB (or break it into smaller files).

Frankford Township School District
Northern Hunterdon-Voorhees Regional High School
Manalapan Township ***(180 MB** - Right Click, Save As)*

Program Updates

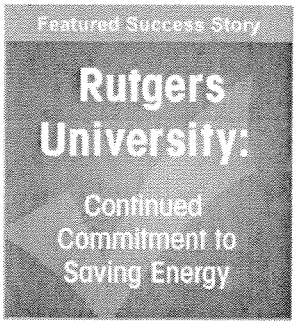
Notice of 2013 Changes to C&I Programs

Warranty and Lease Terms for CHP/Fuel Cells Increased to 10 Years

Large Combined Heat & Power/Fuel Cell Program Update

Board Order - Standby Charges for Distributed Generation Customers

Other updates posted.



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new jersey department of community affairs
people places progress
division of local government services

LFN 2011-17

June 16, 2011

Local Finance Notice

Chris Christie, *Governor* | Kim Guadagno, *Lt. Governor* | Lori Grifa, *Commissioner* | Thomas H. Neff, *Director*

Update on Implementing Energy Savings Improvement Programs

This Local Finance Notice provides guidance concerning Energy Savings Improvement Program (ESIP) matters that affect local units covered under the Local Public Contracts Law (LPCL, N.J.S.A. 40A:11) and the Public School Contracts Law (PSCL, N.J.S.A. 18A:18A).

The Notice covers a model ESCO (Energy Services Company) Request for Proposal document and provides information on using the "Do-It-Yourself" process for implementing an ESIP. This Notice supplements Local Finance Notice 2009-11 concerning ESIPs.

Model ESCO Request for Proposal Document

General Issues

The Division of Local Government Services and the Board of Public Utilities have completed development of a model ESCO Request for Proposal Document. It is designed to assist all organizations (contracting units) covered by the LPCL and PSCL hire an energy services company (ESCO) to develop and implement an Energy Savings Plan (ESP) as part of an Energy Savings Improvement Program as authorized under N.J.S.A. 40A:11-4.6 and 18A:18A-4.6.

Specifically, the document serves as the starting point for these government agencies to select an ESCO through the competitive contracting procedure (N.J.S.A. 40A:11-4.1 et seq. and 18A:18A-4.1 et seq.).

Notwithstanding the efforts of the State agencies to ensure that the RFP is consistent with all relevant procurement procedures, laws, and regulations, there are several issues contracting unit personnel should keep in mind:

1) Local legal advisors should review the document to ensure it is consistent with any allowable local practices and legal considerations.
2) The individual responsible for managing the project should review the entire RFP in order to be able to answer questions and ensure the document meets local needs.
3) Forms have been carefully designed to meet the need of this specific process. Care should be taken if proposed forms are removed and replaced with ones normally used by the contracting unit.

Contact Information

Director's Office
V. 609.292.6613
F. 609.292.9073

Local Government Research
V. 609.292.6110
F. 609.292.9073

Financial Regulation and Assistance
V. 609.292.4806
F. 609.984.7388

Local Finance Board
V. 609.292.0479
F. 609.633.6243

Local Management Services
V. 609.292.7842
F. 609.633.6243

Authority Regulation
V. 609.984.0132
F. 609.984.7388

Mail and Delivery
101 South Broad St.
PO Box 803
Trenton, New Jersey
08625-0803
Web: www.nj.gov/dca/lgs
E-mail: dlgs@dca.state.nj.us

Distribution
Municipal and Freeholder Clerks
Municipal and County Chief Financial Officers
Local Authority and Fire District Officials
School Business Administrators
Local Procurement Officials

The RFP also uses a formal process for potential proposers to submit questions and requests for clarifications. Appendix B is a form for the submission of these requests and is referred to throughout the text.

Contracting units are also reminded the Competitive Contracting process does not allow for negotiating proposals. While legal elements of the contract (project development agreement) may require legal determinations and modifications, the process does not allow for negotiation of price or related substantive elements and any element that would have provided less than a level playing field for proposers.

Contracting units are also cautioned that setting qualification standards that arbitrarily limit competition is inconsistent with public bidding requirements.

Office of State Comptroller Filing: Contracting units are also reminded of their obligations to meet State Comptroller requirements for public contracts. In accordance with N.J.S.A 52:15C-10, contracting units must notify OSC as early as practicable, but no later than 30 days before advertisement, of any negotiation or solicitation of a contract that may exceed $10 million. Contracting units must also provide post-award notification for any contract for an amount exceeding $2 million. Notification must be given within 20 days of the award.

Substantive Edits:

Several sections are highlighted in green. These sections should be carefully edited to meet contracting unit needs. This has important application to evaluation criteria in Section D. Once finalized, the green highlight should be removed.

Section B-16; Insurance should be reviewed by the contracting unit's Risk Management professionals to be sure the standards are appropriate to the contracting unit and the work to be done.

The following Sections also require local decisions and editing:

- A-3: # of copies of proposal and # of CDs to be submitted
- A-4: Web posting address, if desired
- A-5: If extra credit is to be provided on evaluation scoring for attending site walk through
- B-11: Delete LPCL or PSCL section as appropriate
- B-34: Use only if PSCL
- C-1: Explanation of type of audit information
- C-3(k): Include if ESCO is to provide financing option
- Use of Appendix F and Proposal Requirements #8: These forms are related to submission of Political Contribution Disclosure forms. Only PSCL agencies are required to use these forms as pursuant to Public School Fiscal Accountability Procedures (N.J.A.C. 6A23A-6.3). The forms and references to it should be removed for all LPCL users.

Under the ESIP DIY approach, there would be no conflict in a properly procured single organization conducting the audit, developing the ESP, then preparing plans and specifications. This does not apply when using the ESCO approach, where the auditor and ESCO must be independent.

Once construction plans and specifications are complete, the contracting unit would then conduct the bidding process as it would any public works construction project: manage the project as it sees fit (the firm that did the plans could also serve as construction manager), and then contract as necessary for commissioning and final third party verification. The two verification steps (the ESP and verifying implementation) must be performed by an organization independent of the ones preparing the ESP, overseeing construction and commissioning.

By following this process, the contracting unit can then apply to the Local Finance Board for the issuance of ESIP-based energy saving obligations or enter into appropriate lease financing.

The ESIP approach to energy improvement provides a range of options for contracting units to accrue energy savings while improving the environment, taking advantage of low-cost financing and state and federal incentives. DLGS and the BPU encourage comments and questions (through the ESIP web page) on this new opportunity so we can improve it as time goes on.

Approved: Thomas H. Neff, Director, Division of Local Government Services

Table of Web Links

Page	Shortcut text	Internet Address
1, 4	Local Finance Notice 2009-11	http://www.nj.gov/dca/lgs/lfns/09lfns/2009-11.doc
2	ESIP webpage	http://www.nj.gov/dca/lgs/lpcl/esip.htm
2	email comments	mailto:lpcl@dca.state.nj.us
2	to register (via email	mailto:lpcl@dca.state.nj.us
2	GovConnect Local Procurement	http://www.nj.gov/dca/surveys/ppsurvey.htm
3	State Comptroller requirements.	http://www.nj.gov/comptroller/compliance/index.html

New Jersey's Clean Energy PROGRAM
Your Power to Save
njcleanenergy.com

New Jersey SmartStart BUILDINGS

BPU

2012 PAY FOR PERFORMANCE PROGRAM
Existing Buildings Incentive Structure

Incentive #1: Energy Reduction Plan

Incentive Amount: ..... **$0.10 per sq ft**
Minimum Incentive: **$5,000**
Maximum Incentive:: ..... **$50,000 or 50% of facility annual energy cost (whichever is less)**

This incentive is designed to offset the cost of services associated with the development of the Energy Reduction Plan (ERP) and is paid upon ERP approval. Incentive is contingent on implementation of recommended measures outlined in the ERP.

Incentive #2: Installation of Recommended Measures

Minimum Performance Target: **15%**

Electric Incentives

Base Incentive based on 15% savings: ..... **$0.09 per projected kWh saved**
For each % over 15% add: ..... **$0.005 per projected kWh saved**
Maximum Incentive: ..... **$0.11 per projected kWh saved**

Gas Incentives

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This incentive is based on projected energy savings outlined in the ERP. Incentive is paid upon successful installation of recommended measures.

Incentive #3: Post-Construction Benchmarking Report

Minimum Performance Target: **15%**

Electric Incentives

Base Incentive based on 15% savings: ..... **$0.09 per actual kWh saved**
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APPENDIX F

EPA Portfolio Manager

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Park Avenue Water Treatment Plant

Building ID: 3353496
For 12-month Period Ending: August 31, 2012[1]
Date SEP becomes ineligible: N/A

Date SEP Generated: November 16, 2012

Facility
Park Avenue Water Treatment Plant
8790 Park Avenue
Pennsauken, NJ 08109

Facility Owner
Merchantville-Pennsauken Water Commission
6751 Westfield Avenue
Pennsauken, NJ 08110

Primary Contact for this Facility
Richard Spafford, P.E.
6751 Westfield Avenue
Pennsauken, NJ 08110

Year Built: 2004
Energy Performance Rating[2] (1-100) N/A

Site Energy Use Summary[3]	
Electricity - Grid Purchase(kBtu)	7,048,564
Natural Gas (kBtu)[4]	771,807
Total Energy (kBtu)	7,820,371

Energy Intensity[4]	
Site (kBtu/gpd)	0
Source (kBtu/gpd)	N/A

Emissions (based on site energy use)	
Greenhouse Gas Emissions ($MtCO_2e$/year)	1,039

Electric Distribution Utility
Public Service Electric & Gas Co

National Median Comparison	
National Median Site EUI	2
National Median Source EUI	7
% Difference from National Median Source EUI	-100%
Building Type	Water Treatment

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
Gary Edmerson
6 Campus Drive
Parsippany, NJ 07054

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	Park Avenue Water Treatment Plant	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Water Treatment	Is this an accurate description of the space in question?		☐
Location	8790 Park Avenue, Pennsauken, NJ 08109	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Water Utility/Wastewater Plant	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.		☐
Park Avenue Water Treatment Plant (Water Treatment and Distribution Utility)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

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

Fuel Type: Electricity		
Meter: Electricity1 (kWh (thousand Watt-hours)) **Space(s):** Park Avenue Water Treatment Plant **Generation Method:** Grid Purchase		
Start Date	**End Date**	**Energy Use (kWh (thousand Watt-hours))**
08/01/2012	08/31/2012	212,400.00
07/01/2012	07/31/2012	214,400.00
06/01/2012	06/30/2012	211,400.00
05/01/2012	05/31/2012	192,200.00
04/01/2012	04/30/2012	172,800.00
03/01/2012	03/31/2012	175,400.00
02/01/2012	02/29/2012	139,800.00
01/01/2012	01/31/2012	131,400.00
12/01/2011	12/31/2011	134,600.00
11/01/2011	11/30/2011	146,400.00
10/01/2011	10/31/2011	168,400.00
09/01/2011	09/30/2011	161,600.00
Electricity1 Consumption (kWh (thousand Watt-hours))		**2,060,800.00**
Electricity1 Consumption (kBtu (thousand Btu))		**7,031,449.60**
Meter: Electricity2 (kWh (thousand Watt-hours)) **Space(s):** Park Avenue Water Treatment Plant **Generation Method:** Grid Purchase		
Start Date	**End Date**	**Energy Use (kWh (thousand Watt-hours))**
08/01/2012	08/31/2012	576.00
07/01/2012	07/31/2012	438.00
06/01/2012	06/30/2012	438.00
05/01/2012	05/31/2012	384.00
04/01/2012	04/30/2012	414.00
03/01/2012	03/31/2012	444.00
02/01/2012	02/29/2012	378.00
01/01/2012	01/31/2012	378.00
12/01/2011	12/31/2011	402.00
11/01/2011	11/30/2011	288.00
10/01/2011	10/31/2011	450.00
09/01/2011	09/30/2011	426.00
Electricity2 Consumption (kWh (thousand Watt-hours))		**5,016.00**

Electricity2 Consumption (kBtu (thousand Btu))	**17,114.59**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))	**7,048,564.19**
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?	☐

Fuel Type: Natural Gas

Meter: Natural Gas (therms)
Space(s): Park Avenue Water Treatment Plant

Start Date	End Date	Energy Use (therms)
08/01/2012	08/31/2012	43.07
07/01/2012	07/31/2012	86.68
06/01/2012	06/30/2012	203.85
05/01/2012	05/31/2012	660.05
04/01/2012	04/30/2012	786.70
03/01/2012	03/31/2012	1,483.68
02/01/2012	02/29/2012	1,430.11
01/01/2012	01/31/2012	1,377.53
12/01/2011	12/31/2011	1,013.49
11/01/2011	11/30/2011	422.81
10/01/2011	10/31/2011	142.87
09/01/2011	09/30/2011	67.23

Natural Gas Consumption (therms)	**7,718.07**
Natural Gas Consumption (kBtu (thousand Btu))	**771,807.00**
Total Natural Gas Consumption (kBtu (thousand Btu))	**771,807.00**
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.	☐

Flow Type: Average Flow Meter

Meter Name: Average Flow Meter

Start Date	End Date	Average Flow (MGD (million gallons per day))
08/01/2012	08/31/2012	94,192.00
07/01/2012	07/31/2012	101,309.00
06/01/2012	06/30/2012	91,006.00
05/01/2012	05/31/2012	84,802.00
04/01/2012	04/30/2012	77,543.00
03/01/2012	03/31/2012	72,250.00
02/01/2012	02/29/2012	62,575.00
01/01/2012	01/31/2012	49,894.00
12/01/2011	12/31/2011	43,781.00

11/01/2011	11/30/2011	46,261.00
10/01/2011	10/31/2011	65,535.00
09/01/2011	09/30/2011	64,056.00
Total Flow (MGD)		**853,204.00**

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) and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

General Information:

Park Avenue Water Treatment Plant	
Year Built	2004
For 12-month Evaluation Period Ending Date:	August 31, 2012

Facility Space Use Summary

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date: 08/31/2012)	**Baseline** (Ending Date: 08/31/2012)	**Rating of 75**	**Target**	**National Median**
Energy Performance Rating	**N/A**	**N/A**	75	N/A	N/A
Energy Intensity					
Site (kBtu/gpd)	0	0	0	N/A	2
Source (kBtu/gpd)	0	0	N/A	N/A	7
Energy Cost					
$/year	$ 274,644	$ 274,644	N/A	N/A	N/A
$/mgpd/year	$3.86	$3.86	N/A	N/A	N/A
Greenhouse Gas Emissions					
$MtCO_2e$/year	1,039	1,039	N/A	N/A	N/A
$kgCO_2e/ft^2$/year	N/A	N/A	N/A	N/A	N/A