



Steven Winter Associates, Inc.
Architects and Engineers

293 Route 18 South, Suite 330
East Brunswick, NJ 08816

Telephone: (866) 676-1972
E-mail: swinter@swinter.com
www.swinter.com

June 17, 2010

**Local Government Energy Program
Energy Audit Report**

***Middletown Township
Health Department
3 Penelope Lane
Middletown, NJ 07748***

Project Number: LGEA41



TABLE OF CONTENTS

INTRODUCTION	3
EXECUTIVE SUMMARY	4
1. HISTORIC ENERGY CONSUMPTION.....	7
1.1 ENERGY USAGE AND COST ANALYSIS.....	7
1.2 UTILITY RATE	8
1.3 ENERGY BENCHMARKING	8
2. FACILITY AND SYSTEMS DESCRIPTION.....	11
2.1 BUILDING CHARACTERISTICS	11
2.2 BUILDING OCCUPANCY PROFILES	11
2.3 BUILDING ENVELOPE	11
2.3.1 EXTERIOR WALLS.....	11
2.3.2 ROOF.....	11
2.3.3 BASE.....	11
2.3.4 WINDOWS	11
2.3.5 EXTERIOR DOORS.....	11
2.3.6 BUILDING AIR TIGHTNESS.....	11
2.4 HVAC SYSTEMS.....	12
2.4.1 HEATING.....	12
2.4.2 COOLING.....	12
2.4.3 VENTILATION	12
2.4.4 DOMESTIC HOT WATER	13
2.5 ELECTRICAL SYSTEMS	13
2.5.1 LIGHTING.....	13
2.5.2 APPLIANCES AND PROCESS	14
2.5.3 ELEVATORS	14
2.5.4 OTHER ELECTRICAL SYSTEMS.....	14
3. EQUIPMENT LIST.....	15
4. ENERGY CONSERVATION MEASURES.....	16
5. RENEWABLE AND DISTRIBUTED ENERGY MEASURES	22
5.1 EXISTING SYSTEMS	22
5.2 SOLAR PHOTOVOLTAIC.....	22
5.3 SOLAR THERMAL COLLECTORS.....	22
5.4 COMBINED HEAT AND POWER	22
5.5 GEOTHERMAL	22
5.6 WIND.....	22
6. ENERGY PURCHASING AND PROCUREMENT STRATEGIES.....	22
6.1 LOAD PROFILES	22
6.2 ENERGY PROCUREMENT STRATEGIES	24
7. METHOD OF ANALYSIS	26
7.1 ASSUMPTIONS AND TOOLS	26
7.2 DISCLAIMER	26
APPENDIX A: LIGHTING STUDY	27
APPENDIX B: THIRD PARTY ENERGY SUPPLIERS (ESCOs).....	28

INTRODUCTION

On November 23, 2009 and December 8, 2009, Steven Winter Associates, Inc. (SWA) and PMK Group, Inc., a business unit of Birdsall Services Group (BSG-PMK), performed an energy audit and assessment for the Health Department Building. The building is located at 3 Penelope Lane, Middletown, New Jersey 07748, in Monmouth County. The current conditions and energy-related information were collected in order to analyze and facilitate the implementation of energy conservation measures for the building.

The one-story facility was built in 1978. The building has a total area of 2,120 square feet and houses the board of health and other administrative offices. The building is open from 8:00 AM to 5:00 PM Monday through Friday and is occupied by approximately 9 employees.

Energy data and building information collected in the field were analyzed to determine the baseline energy performance of each building. Using spreadsheet-based calculation methods, SWA and BSG-PMK estimated the energy and cost savings associated with the installation of each of the recommended energy conservation measures. The findings for the building are summarized in this report.

The goal of this energy audit is to provide sufficient information to make decisions regarding the implementation of the most appropriate and most cost effective energy conservation measures for the buildings.

Launched in 2008, the LGEA Program provides subsidized energy audits for municipal and local government-owned facilities, including offices, courtrooms, town halls, police and fire stations, sanitation buildings, transportation structures, schools and community centers. The Program will subsidize 75% of the cost of the audit. If the net cost of the installed measures recommended by the audit, after applying eligible NJ SmartStart Buildings incentives, exceeds the remaining cost of the audit, then the additional 25% will also be paid by the program. The Board of Public Utilities (BPU) Office of Clean Energy has assigned TRC Energy Services to administer the Program.

EXECUTIVE SUMMARY

This document contains the energy audit report for the Health Department Building, located at 3 Penelope Lane, Middletown, New Jersey 07748.

Based on the field visits performed by SWA/ BSG-PMK staff on November 23, 2009 and December 8, 2009, and the results of a comprehensive energy analysis, this report describes the site's current conditions and recommendations for improvements. Suggestions for measures related to energy conservation and improved comfort are provided in the scope of work. Energy and resource savings are estimated for each measure that results in a reduction of heating, cooling, and electric usage.

Current conditions

In the most recent full year of data collected, October, 2008 through October, 2009, the facility consumed a total of 33,733 kWh of electricity for a total cost of \$6,300 and 1,146 therms of natural gas, for a total cost of \$1,861.

With electricity and fossil fuel combined, the building consumed 229 MMBtus of energy at a total cost of \$8,161.

SWA/ BSG-PMK has entered energy information about the Facility in the US Environmental Protection Agency's (EPA) *Energy Star Portfolio Manager* energy benchmarking system. In order to compare commercial buildings equitably, the *Portfolio Manager* ratings convey the consumption of each type of energy in a single common unit called EUI (energy use index) with units in kBtu/sqft. The EPA uses site energy to represent the total amount of raw fuel required to operate the building. The site energy use intensity for the complex is 103.0 kBtu/sq.ft/year. After energy efficiency improvements are made, future utility bills can be added to the Portfolio Manager and the site energy use intensity for a different time period can be compared to the year 2009 baseline to track the changes in energy consumption associated with the energy improvements.

Buildings achieving an Energy Star score of 75 are eligible to apply for the Energy Star award and receive the Energy Star plaque to convey superior performance. These ratings also greatly help when applying for Leadership in Energy and Environmental Design (LEED) building certification through the United States Green Building Council (USGBC). SWA/ BSG-PMK encourages the Township of Middletown to continue entering utility data in *Energy Star Portfolio Manager* in order to track whether normalized source energy use over time. The building performance rating could not be determined because this is a mixed-use facility, comprised by non-eligible space types categorized as "Other" so a kBtu/sq.ft. number was used to compare this buildings to other similar buildings.

(Refer to Section 1.3 for Energy Star Rating)

Category I Recommendations: Capital Improvement Measures

Replace the current water heater on an as-fail basis. There is a significant payback period when replacing one gas water heater with another which negates this measures ability to be an ECM.

Category II Recommendations: Operations and Maintenance

- Replace deteriorated rear entrance porch.
- The floor joists above the crawl space should be insulated.
- The window to the crawl space should be closed and weather stripped.

Category III Recommendations: Energy Conservation Measures - Upgrades with associated energy savings

At this time, SWA/BSG-PMK highly recommends a total of **3** Energy Conservation Measures (ECMs) for the Health Department that are summarized in the following tables. The total investment cost for these ECMs is **\$5,245**. SWA/ BSG-PMK estimate a first year savings of **\$1,393** with a simple payback of **3.8 years**. SWA/ BSG-PMK estimate that implementing the highly recommended ECMs will reduce the carbon footprint of the Health Department building by **10,046 lbs of CO₂**.

SWA/BSG-PMK also recommends that the Township of Middletown contact third party energy suppliers in order to negotiate a lower electricity rate. Comparing the current electric rate to average utility rates of similar type buildings in New Jersey, it may be possible to save up to \$ 0.04/kWh, which would have equated to \$1,240 for the past 12 months. Comparing the current natural gas rate to average utility rates of similar type buildings in New Jersey, it may be possible to save up to \$0.07/kWh, which would have equated to \$85 for the past 12 months.

There are various incentives that the Township of Middletown could apply for that could also help lower the cost of installing the ECMs. SWA/ BSG-PMK and SWA recommend that the Township apply for the NJ SmartStart program through the New Jersey Office of Clean Energy. This incentive can help provide technical assistance for the building in the implementation phase of any energy conservation project. A new NJ Clean Power program, Direct Install, could also assist to cover up to 80% of the capital investment. In order to qualify, the facility being upgraded must not have had a peak demand that exceeded 200 kW in any of the preceding 12 months; the highest peak demand for the complex in the previous year was 12.2 kW.

The following table summarizes the proposed Energy Conservation Measures (ECM) and their economic relevance:

:

ROI: Return on Investment (%)

Assumptions:

Discount rate: 3.2% per DOE FEMP guidelines
 Energy price escalation rate: 0% per DOE FEMP guidelines

Electricity rate: \$0.19 /kWh
 Gas rate: \$1.62 /therm

Avg. Annual Demand: 0.003541

Area of Building (SF)

2,120

Table 1 - Highly Recommended 0-5 Year Payback ECMs																			
ECM #	ECM description	Source	Est. Installed Cost, \$	Est. Incentives, \$	Net Est. ECM Cost with Incentives, \$	kWh, 1st Yr Savings	kW, Demand Reduction/Mo	Therms, 1st Yr Savings	kBtu/sq ft, 1st Yr Savings	Est. Operating Cost, 1st Yr Savings, \$	Total 1st Yr Savings, \$	Life of Measure, Yrs	Est. Lifetime Energy Cost Savings, \$	Simple Payback, Yrs	Lifetime Return on Investment, %	Annual Return on Investment, %	Internal Rate of Return, %	Net Present Value, \$	CO ₂ Reduced, lbs/yr
1	Lighting Upgrades	Empirical Data	\$1,530	\$285	\$1,245	2,089	0.62	0	3.36	\$0	\$397	15	\$4,670	3.14	1834%	122%	31%	\$3,492	2,861
2	High-Efficiency Condensing Unit	Similar Projects	\$5,000	\$4,000	\$1,000	2,633	0.78	0	4.24	\$0	\$500	15	\$5,887	2.00	3258%	217%	50%	\$4,973	3,607
TOTAL			\$6,530	\$4,285	\$2,245	4,722	1.39	0	7.60	\$0.00	\$897	-	\$10,557	2.50	-	-	-	\$8,465	6,469

Table 2 - Recommended 5-10 Year Payback ECMs																			
ECM #	ECM description	Source	Est. Installed Cost, \$	Est. Incentives, \$	Net Est. ECM Cost with Incentives, \$	kWh, 1st Yr Savings	kW, Demand Reduction/Mo	Therms, 1st Yr Savings	kBtu/sq ft, 1st Yr Savings	Est. Operating Cost, 1st Yr Savings, \$	Total 1st Yr Savings, \$	Life of Measure, Yrs	Est. Lifetime Energy Cost Savings, \$	Simple Payback, Yrs	Lifetime Return on Investment, %	Annual Return on Investment, %	Internal Rate of Return, %	Net Present Value, \$	CO ₂ Reduced, lbs/yr
3	High-Efficiency Furnace	Similar Projects	\$15,000	\$12,000	\$3,000	0	0.00	306	14.42	\$0	\$495	20	\$7,235	6.06	705.91%	35%	13%	\$2,268	3,578
TOTAL			\$15,000	\$12,000	\$3,000	0	0.00	306	14.42	\$0.00	\$495	-	\$7,235	6.06	-	-	-	\$2,268	3,578

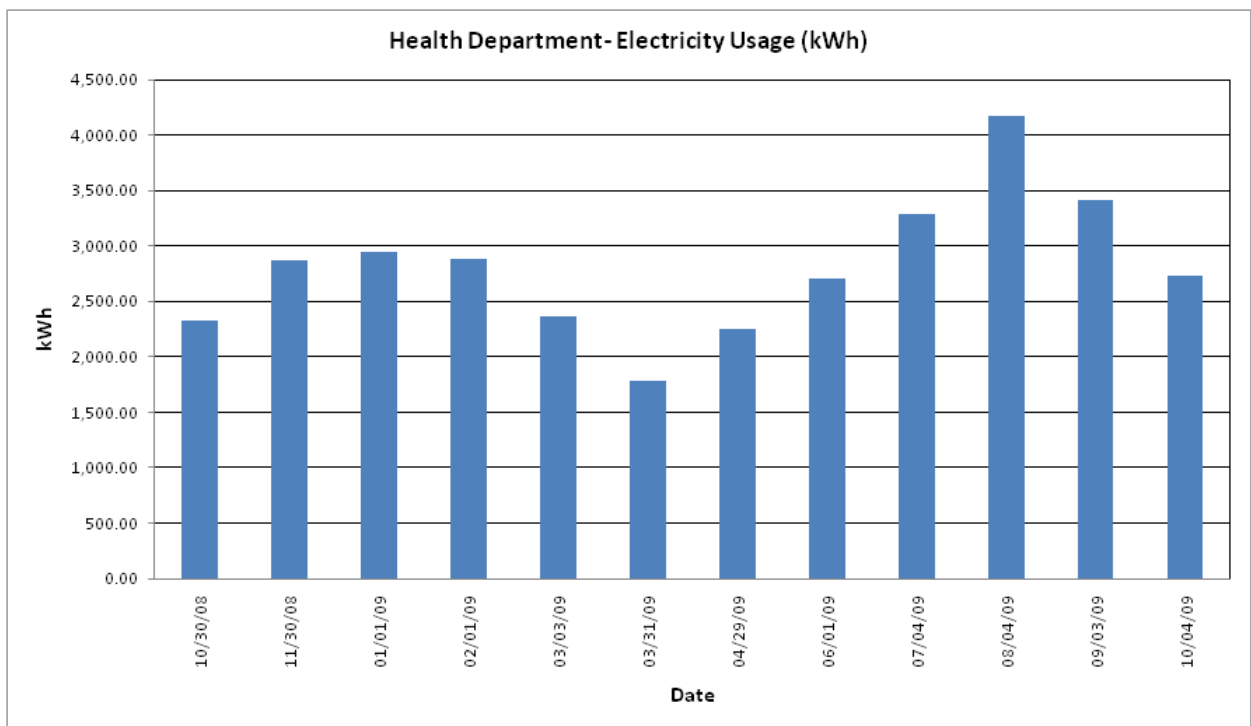
1. HISTORIC ENERGY CONSUMPTION

1.1 Energy Usage and Cost Analysis

SWA/BSG-PMK analyzed utility bills from October, 2008 through December, 2009 that were received from the utility companies supplying the Health Department with electric and natural gas.

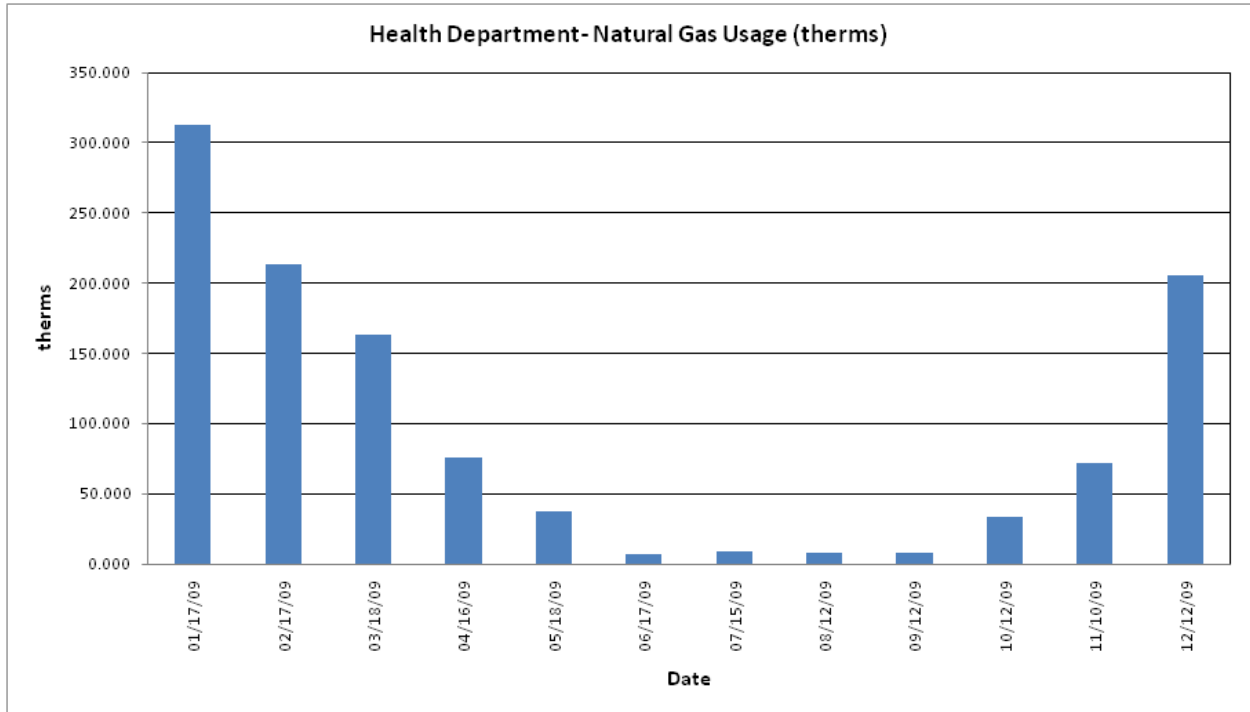
Electricity - The Health Department is currently served by one electric meter and receives electricity from Jersey Central Power & Light at **an average rate of \$0.19/kWh** based on 12 months of utility bills from October, 2008 through October, 2009. The building consumes **33,733 kWh or \$6,300 worth of electricity** during that time span.

The following chart shows electricity usage for the building based on utility bills from October, 2008 through October, 2009:



Natural Gas - The Health Department is currently served by one natural gas meter and receives gas from New Jersey Natural Gas at **an average rate of \$1.62/therm** based on 12 months of utility bills from January, 2009 through December, 2009. The building consumed **1,146 therms or \$1,861 worth of natural gas** during that time span.

The following chart shows the natural gas consumption for the complex based on natural gas bills for the 12 month period of January, 2009 through December, 2009:



1.2 Utility Rate

The Health Department currently purchases electricity from Jersey Central Power & Light for electricity use (kWh) with a separate (kW) demand charge. The complex currently pays an average rate of approximately \$0.19/kWh based on the 12 months of utility bills of October, 2008 through October, 2009.

The Health Department currently purchases natural gas supply and transmission from New Jersey Natural Gas at an average aggregated rate of \$1.62/therm based on 12 months of utility bills from January, 2009 through December, 2009.

1.3 Energy Benchmarking

The building information and utility data were entered into the U.S. Environmental Protection Agency's (EPA) *Energy Star Portfolio Manager* Energy benchmarking system. BSG-PMK and SWA recommend that the Borough maintain the Portfolio Manager account at the link below. As the account is maintained, BSG-PMK and SWA can share with the Township and allow future data to be added and tracked using the benchmarking tool.

http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

Username: middletowntownship
Password: middletown

Buildings achieving an Energy Star rating of 75 are eligible to apply for the Energy Star award and receive the Energy Star plaque to convey superior performance. These ratings also greatly help when applying for Leadership in Energy and Environmental Design (LEED) building certification through the United States Green Building Council (USGBC). The building performance rating could not be determined because this is a mixed-use facility, comprised by non-eligible space types categorized as "Other" so a kBtu/sq.ft. number was used to compare this buildings to other similar buildings. SWA/BSG-PMK encourages the Township to

continue entering utility data in Energy Star Portfolio Manager in order to track whether normalized source energy use over time.

The Site Energy Use Intensity is 103.0 kBtu/ft²yr compared to the national average of 77.0 kBtu/ft²yr for commercial buildings classified similarly by the Energy Star Portfolio Manager. Implementing this report's recommendations will reduce use by approximately 22.0 kBtu/ft²yr, which when implemented would lower the buildings energy consumption.



STATEMENT OF ENERGY PERFORMANCE Health Department

Building ID: 2064772

For 12-month Period Ending: November 30, 2009¹

Date SEP becomes ineligible: N/A

Date SEP Generated: February 18, 2010

Facility
Health Department
3 Penelope Lane
Middletown, NJ 07748

Facility Owner
Middletown Township
1 Kings Highway
Middletown, NJ 07749

Primary Contact for this Facility
Jason Greenspan
1 King's Highway
Middletown, NJ 07737

Year Built: 1978

Gross Floor Area (ft²): 2,120Energy Performance Rating² (1-100) N/A**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	115,097
Natural Gas (kBtu) ⁴	102,785
Total Energy (kBtu)	217,882

Energy Intensity⁵

Site (kBtu/ft ² /yr)	103
Source (kBtu/ft ² /yr)	232

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	23
---	----

Electric Distribution Utility

FirstEnergy - Jersey Central Power & Lt Co

National Average Comparison

National Average Site EUI	77
National Average Source EUI	182
% Difference from National Average Source EUI	28%
Building Type	Office

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 Standards⁶ for Indoor Environmental Conditions:

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

Certifying Professional

N/A

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. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. 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.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, PE facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

2. FACILITY AND SYSTEMS DESCRIPTION

2.1 Building Characteristics

The Health Department was built in 1978. The building has a total area of 2,120 square feet and houses the board of health and other administrative offices.

2.2 Building Occupancy Profiles

The building is open from 8:00 AM to 5:00 PM Monday through Friday and is occupied by approximately 9 employees.

2.3 Building Envelope

2.3.1 Exterior Walls

The exterior walls are 3 5/8" wood frame construction with vinyl siding. The interiors of the exterior walls are gypsum wallboard with R11 batt insulation. The walls are in good condition.



2.3.2 Roof

The roof is constructed from wood rafters and finished with asphalt shingles. The attic is an unconditioned space. The roof is new and in good condition.

2.3.3 Base

There is an unconditioned basement in the building. The basement floor is concrete. The base is in good condition.

Category II Repair and Maintenance: It is recommended to provide insulation in the floor joists.



2.3.4 Windows

There are thermal pane vinyl windows on the building. All are in good condition.

2.3.5 Exterior doors

The exterior doors are insulated metal doors and in fair condition. The weather-stripping is in good condition.

Category II: Repair and Maintenance- The rear porch is showing signs of deterioration and is becoming a hazard and should be addressed.



2.3.6 Building air tightness

There was evidence of temperature imbalance and infiltration with the exception of the office over the crawl space. The other portions of the building had a fair air tightness.

2.4 HVAC Systems

2.4.1 Heating

The building is heated by a York model GC8-12520MVD1A gas fired forced-air furnace,. The unit is 125 MBH and 80% efficient.

Category III Recommendations – ECM #3: Replace the current furnace with a high-efficiency condensing, modulating furnace.

2.4.2 Cooling

The facility is air conditioned by a 3 ton Arcoaire Max Performance 10 condensing unit, and matching furnace mounted cooling coil. All occupied spaces on the main floor are conditioned.

Category III Recommendations – ECM #2: Replace the current condensing unit with a high-efficiency unit.



Arcoaire Condensing Unit

2.4.3 Ventilation

There is a Nutone kitchen exhaust fan in the kitchen ceiling, and an ABC Fan Co. radon ventilation fan in the basement. Additional ventilation is provided by the doors and windows. All were found to be in fair condition.



Radon Ventilation Fan

2.4.4 Domestic Hot Water

Water is heated by a 40 gallon AO Smith Energy Saver water heater, rated at 40 MBH.

Category I Recommendations – Capital Improvement: Replace the current water heater on an as-fail basis. The efficiency of a new water heater is slightly greater than the unit that exists, this being the case, replacing the unit now would not yield a great savings and the payback period would be too long to recommend as an ECM.

2.5 Electrical systems

2.5.1 Lighting

A complete inventory of all interior, exterior, and exit sign light fixtures were examined and documented in Appendix A of this report including an estimated total lighting power consumption. Our initial findings indicate that performing a detailed lighting upgrade per the recommendations in Appendix A will result in an annual savings of \$396.83 based on the current \$0.19/kWh and the current occupancy schedule. Implementation of this ECM will cost approximately \$1,530.00. Currently the Board of Public Utilities (BPU) would offer an estimated rebate of \$285.00, yielding a net cost of \$1,245.00 for this project. With a yearly savings of \$396.83 the payback on this ECM would about 3.1 years.

Category III Recommendation - ECM #1: Recommend upgrading all T-12 lighting fixtures with magnetic ballasts to T-8 fixtures with electronic ballasts, as well as various other lighting upgrades outlined in Appendix A. It is not recommended to install lighting sensors in certain areas, such as bathrooms, since the paybacks would be extremely high.

Refer to Appendix A for further details.

2.5.2 Appliances and process

At this facility, there are 8 computers, 3 refrigerators (GE model number TBX25PABRRBB, Amana model number ABB2222FEQ, and Kenmore model number TPK140EN4D), a Tappan microwave, and an Oster toaster oven.

2.5.3 Elevators

There are no elevators in the facility.

2.5.4 Other electrical systems

There are currently no other significant energy impacting electrical systems installed at the Health Department.

3. EQUIPMENT LIST

Building System	Description	Location	Model #	Fuel	Space Served	Estimated Remaining Useful Life %
Heating/ Cooling	Forced Air Furnace, 125,000 BTU/Hr, 80% efficient	Basement	York M# G8C- 12520MVD11A	Natural Gas	Building	39%
Cooling	3-ton condensing unit	Outside	Arcoaire Max Performance 10 M# HAC036 AKA5	Electric	Building	27%
Ventilation	Kitchen exhaust fan	Kitchen ceiling	Nutone M# QT- 1000	Electric	Kitchen ceiling	80%
Ventilation	Fan for radon ventilation	Basement	ABC Fan M# TBP8	Electric	Basement	80%
Domestic Hot Water	40 gallon water heater, 40 MBH, 40.9 gal/hr recovery	Basement	AO Smith Energy Saver	Natural Gas	Building	25%

Note: The remaining useful life of a system (in %) is the relationship between the system manufactured and/or installed date and the standard life expectancy of similar equipment based on ASHRAE (2003), ASHRAE Handbook: HVAC Applications, Chapter 36.

4. ENERGY CONSERVATION MEASURES

Based on the assessment of the Health Department, SWA/ BSG-PMK has separated the investment opportunities into three recommended categories:

1. Capital Improvements - Upgrades not directly associated with energy savings
2. Operations and Maintenance - Low Cost / No Cost Measures
3. Energy Conservation Measures - Higher cost upgrades with associated energy savings

Category I Recommendations: Capital Improvement Measures

Replace the current water heater on an as-fail basis. The efficiency of a new water heater is slightly greater than the unit that exists, this being the case, replacing the unit now would not yield a great savings and the payback period would be too long to recommend as an ECM.

Category II Recommendations: Operations and Maintenance

- Replace deteriorated rear entrance porch.
- The floor joists above the crawl space should be insulated.
- The window to the crawl space should be closed and weather stripped.

Category III Recommendations: Energy Conservation Measures

Summary table

ECM #	Description
1	Lighting Upgrades
2	High Efficiency Condensing Units
3	Upgrade Furnace

ECM#1: Lighting Upgrades

Description:

Lighting at the Health Department consists primarily of T-12 fluorescent lamps with magnetic ballasts. The exterior was lit with incandescent lamps that should be replaced with compact fluorescents. It is recommended that all T-12 fixtures with magnetic ballasts be retrofit with T-8 lamps and electronic ballasts. Lighting replacement generally yields a very good payback, due to the fact that most lighting usage in commercial buildings is fairly high and the installation is relatively inexpensive.

Recommended lighting upgrades are detailed in Appendix A.

Installation cost:

Summary	Lighting (Only)	Sensors (Only)	Complete Lighting Upgrade
Cost	\$1,530.00	\$0.00	\$1,530.00
Rebate	\$285.00	\$0.00	\$285.00
Net Cost	\$1,245.00	\$0.00	\$1,245.00
Savings (kWh)	2,089	0	2,089
Savings (\$)	\$396.83	\$0.00	\$396.83
Payback	3.1		3.1

Variables:

\$0.19	Avg. Electric Rate (\$/kWh)
	Avg. Demand Rate (\$/kW)
2080	Operating Hours/Year
8	Operating Hours/Work Day

Assumptions:

25%	Occupancy Sensor Savings (Avg)
40%	Occupancy Sensor Savings(>Avg)

Source of cost estimate: Empirical Data

Economics (without incentives):

ECM #	ECM description	Source	Est. Installed Cost, \$	Est. Incentives, \$	Net Est. ECM Cost with Incentives, \$	kWh, 1st Yr Savings	kW, Demand Reduction/Mo	Therms, 1st Yr Savings	kBtu/sq ft, 1st Yr Savings	Est. Operating Cost, 1st Yr Savings, \$	Total 1st Yr Savings, \$	Life of Measure, Yrs	Est. Lifetime Energy Cost Savings, \$	Simple Payback, Yrs	Lifetime Return on Investment, %	Annual Return on Investment, %	Internal Rate of Return, %	Net Present Value, \$	CO ₂ Reduced, lbs/yr
1	Lighting Upgrades	Empirical Data	\$1,530	\$285	\$1,245	2,089	0.62	0	3.36	\$0	\$397	15	\$4,670	3.14	1834%	122%	31%	\$3,492	2,861

Assumptions:

The electric cost used in this ECM was \$0.19/kWh, which was the Health Department's average rate for the 12-month period ranging from October, 2008 through October, 2009. The replacements for each lighting fixture, the costs to replace or retrofit each one, and the rebates and wattages for each fixture are found in Appendix A.

Rebates/financial incentives:

The New Jersey SmartStart offers rebates for upgrading lighting fixtures and installing lighting controls. The total prescriptive lighting rebate through the SmartStart rebate for this ECM qualifies for is \$285.

ECM#2: High-Efficiency Condensing Unit

Description:

The Health Department is cooled by a 3 ton Arcoaire Max Performance 10 condensing unit, and a furnace mounted cooling coil located in the basement. This unit is nearing the end of its useful life, and more energy-efficient models are now on the market. The newer condensing units use Puron refrigerant, a more efficient fluid than the current refrigerant, R-22. It is recommended that the current condensing unit be replaced with one that has a higher Seasonal Energy Efficiency Ratio (SEERs); units with SEERs up to 21 are available. The SEER of the current unit was approximately 12 at the time of its purchase; based on its age and condition, it can be estimated that the SEER has decreased by 20%, to 9.6.

Installation cost: \$5,000

Source of cost estimate: Similar projects

Economics:

ECM #	ECM description	Source	Est. Installed Cost, \$	Est. Incentives, \$	Net Est. ECM Cost with Incentives, \$	kWh, 1st Yr Savings	kW Demand Reduction/Mo	Therms, 1st Yr Savings	kBtu/sq ft, 1st Yr Savings	Est. Operating Cost, 1st Yr Savings, \$	Total 1st Yr Savings, \$	Life of Measure, Yrs	Est. Lifetime Energy Cost Savings, \$	Simple Payback, Yrs	Lifetime Return on Investment, %	Annual Return on Investment, %	Internal Rate of Return, %	Net Present Value, \$	CO ₂ Reduced, lbs/yr
2	High-Efficiency Condensing Unit	Similar Projects	\$5,000	\$4,000	\$1,000	2,633	0.78	0	4.24	\$0	\$500	15	\$5,887	2.00	3258%	217%	50%	\$4,973	3,607

Assumptions:

Using the facility's electricity bills from October 15th, 2008 through October 19th, 2009, the cost of electricity was found to be \$0.19/kWh. SEER values, as stated above, are 9.6 for the current unit and 21 for the proposed one. 1,024 cooling degree-days and a 0.4% dry-bulb temperature of 93°F were used for calculations; this data was provided by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE). The desired indoor temperature during the cooling season was assumed to be 74°F.

The following degree-day equation for cooling systems, was used to calculate the electric consumptions of the current and proposed air-conditioners:

$$\frac{\text{Capacity} \times \text{Degree-Days} \times 24 \frac{\text{hours}}{\text{day}}}{1,000 \times \text{EER} \times (\text{Temp}_{0.4\%} - \text{Temp}_{\text{indoor}})} = \text{Electric Consumption (in kWh)}$$

Rebates/financial incentives:

This ECM may be eligible for incentives through New Jersey's Direct Install Program, which can incentivize up to 80% of the total installation cost, which we estimate to be \$4,000 for this measure. Please note that these incentive levels are estimates based on SWA's expected project cost and assumption of project eligibility. Actual incentive levels and project eligibility can only be determined through an Energy Assessment performed by a Direct Install Contractor.

ECM#3: High-Efficiency Furnace

Description:

Heat is provided by a natural gas York forced-air furnace. The unit is nearing the end of its useful life of 20 years, and should be replaced by a more efficient unit. Natural gas modulating furnaces with efficiencies between 94% and 98% are available. The current unit is equipped with a cooling coil, which is fed by a condensing unit

Installation cost:

Estimated installed cost: \$15,000

Source of cost estimate: Similar projects

Economics:

ECM #	ECM description	Source	Est. Installed Cost, \$	Est. Incentives, \$	Net Est. ECM Cost with Incentives, \$	kWh, 1st Yr Savings	kW, Demand Reduction/Mo	Therms, 1st Yr Savings	kBtu/sq ft, 1st Yr Savings	Est. Operating Cost, 1st Yr Savings, \$	Total 1st Yr Savings, \$	Life of Measure, Yrs	Est. Lifetime Energy Cost Savings, \$	Simple Payback, Yrs	Lifetime Return on Investment, %	Annual Return on Investment, %	Internal Rate of Return, %	Net Present Value, \$	CO ₂ Reduced, lbs/yr
3	High-Efficiency Furnace	Similar Projects	\$15,000	\$12,000	\$3,000	0	0.00	306	14.42	\$0	\$495	20	\$7,235	6.06	705.91%	35%	13%	\$2,268	3,578

Assumptions:

The annual heating consumption for the current system was taken from the energy bills. The building consumed 1,146 therms of natural gas in 2009, for heating From July through September, the furnace did not produce heat, and the gas bills for these months were consistent, varying by less than 1.1 therms over this period of time. The average for these four months, 8 therms, can be assumed to be the amount of gas used for domestic hot water, which would not vary with the change in seasons, yielding an annual heating consumption for the water heater of 97 therms. When subtracted from the total therms the Health Department purchased, this yields 1,041 therms for the total heating consumption by the furnace. The efficiency of the old furnace is assumed to be 85% of the original 80% efficiency rating or 68% efficient in its current state. The new system will be 96% efficient. The saving was calculated using the following series of equations:

Current gas input: 1,041 therms

Current/proposed gas output: 1,041 therms×68%=713 therms

Proposed gas input: $\frac{713 \text{ therms}}{96\%} = 743 \text{ therms}$

Savings: 1,041 therms-743 therms=306 therms

Rebates/financial incentives:

This ECM may be eligible for incentives through New Jersey's Direct Install Program, which can incentivize up to 80% of the total installation cost, which we estimate to be \$12,000 for this measure. Please note that these incentive levels are estimates based on SWA's expected project cost and assumption of project eligibility. Actual incentive levels and project eligibility can only be determined through an Energy Assessment performed by a Direct Install Contractor.

5. RENEWABLE AND DISTRIBUTED ENERGY MEASURES

5.1 EXISTING SYSTEMS

There are currently no existing renewable energy systems.

5.2 SOLAR PHOTOVOLTAIC

Photovoltaic (PV) technology would not be cost beneficial to this project since there too much shading and a small area of viable space available.

5.3 Solar Thermal Collectors

Solar thermal collectors are not cost effective for this project and are not recommended due to the low amount of domestic hot water use throughout the building.

5.4 Combined Heat and Power

CHP is not applicable to this project because of the HVAC system type and limited domestic hot water usage.

5.5 Geothermal

Geothermal is not applicable to this project because it would require modifications to the existing heat distribution system, which would not be cost effective.

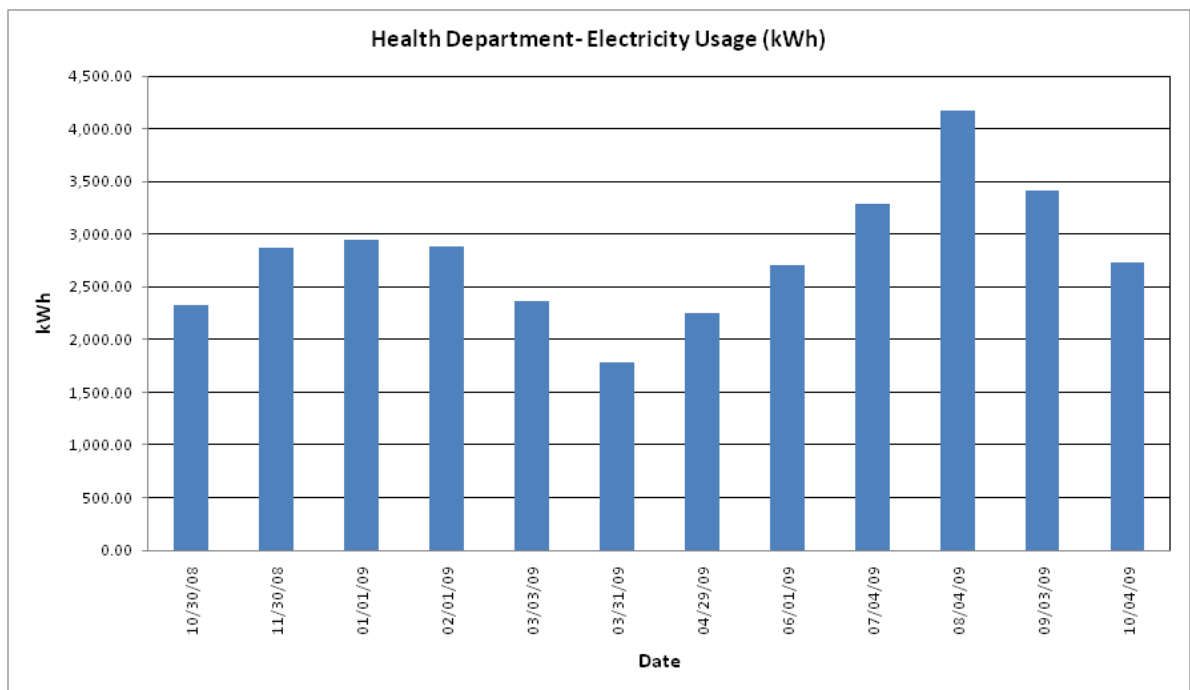
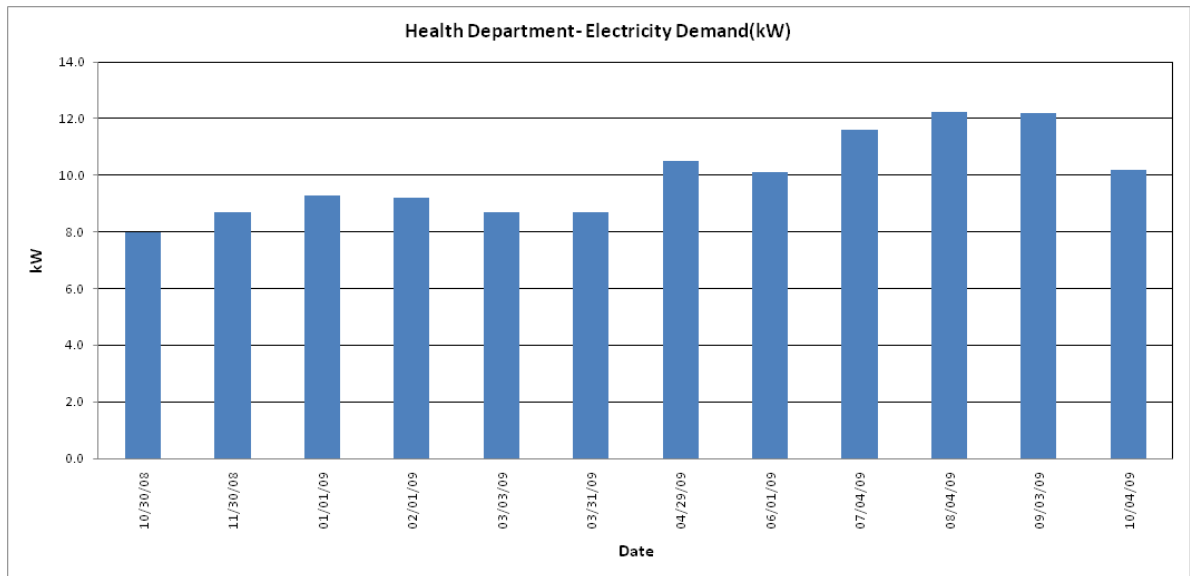
5.6 Wind

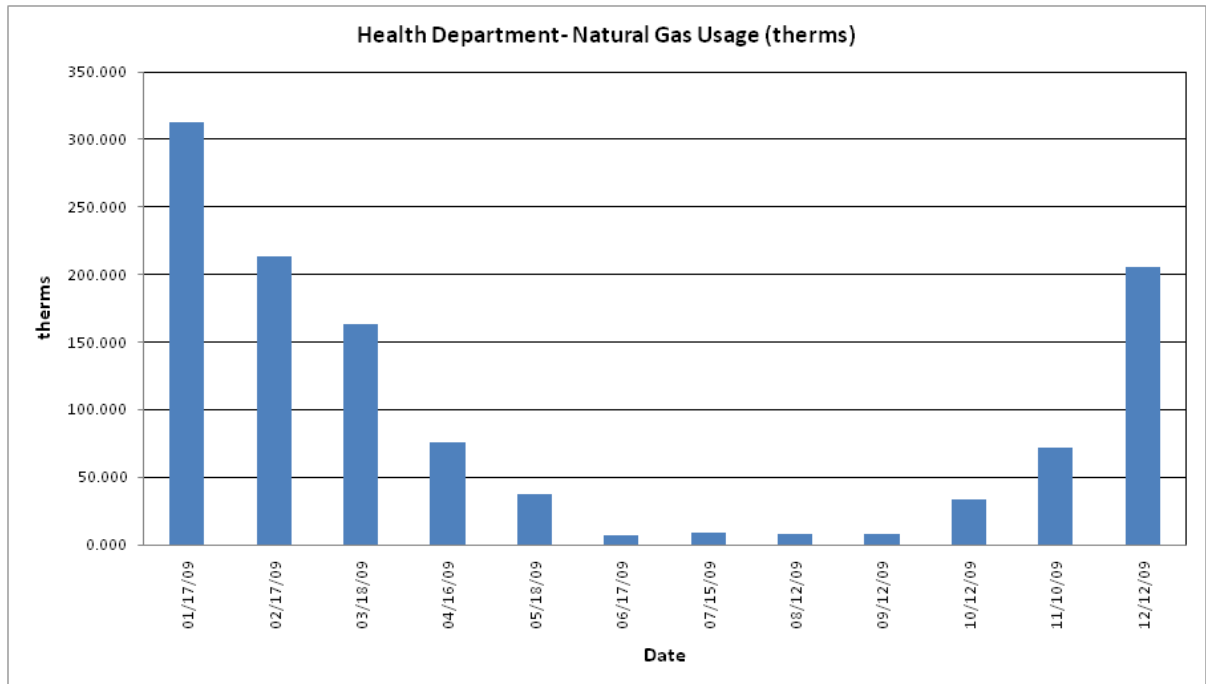
Wind power production is not appropriate for this location because required land is not available for the wind turbine. Also, the available wind energy resource is very low.

6. ENERGY PURCHASING AND PROCUREMENT STRATEGIES

6.1 Load profiles

The average electrical peak demand for the facility during previous year was 10 kW and the maximum peak demand was 12.2 kW. The electric and gas load profiles for this project are presented in the following charts. The first chart shows the electric demand (in kW) for the previous 12 months and the other two charts show electric (in kWh) and gas usage (in therms), respectively.



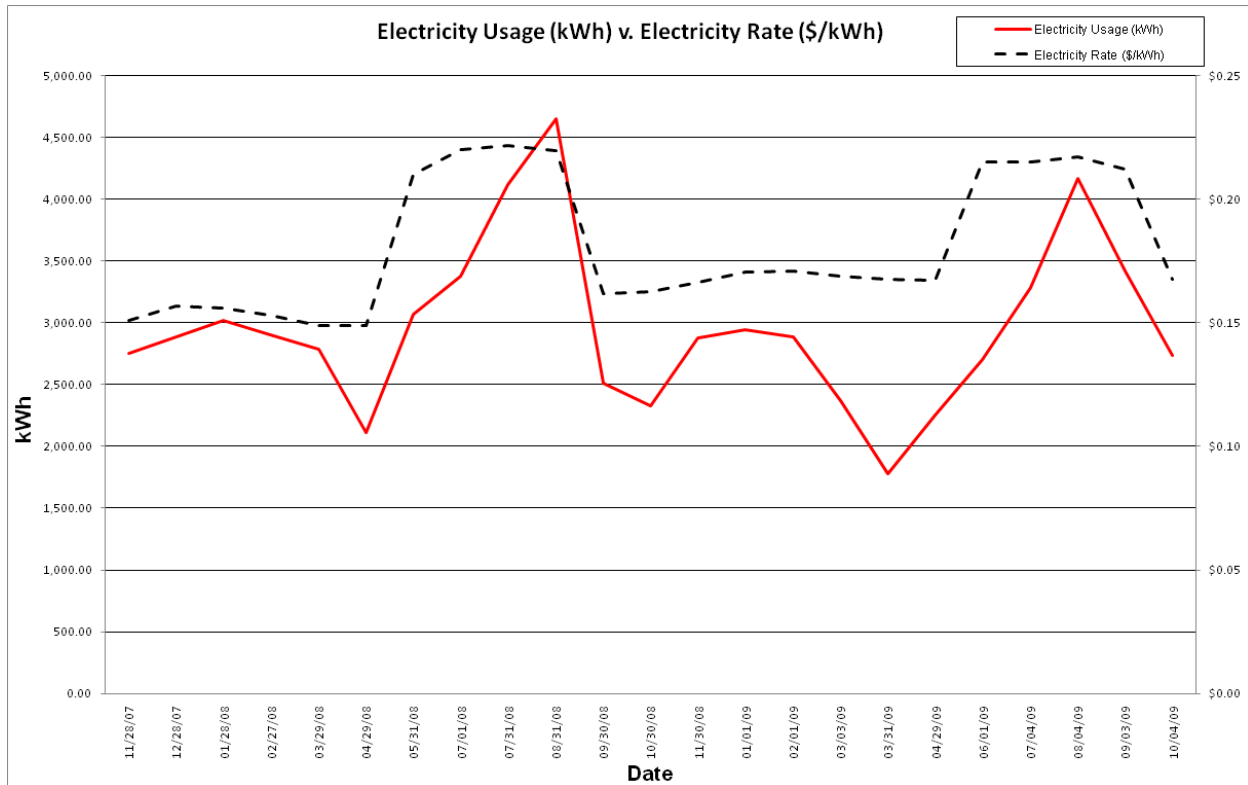


6.2 Energy Procurement strategies

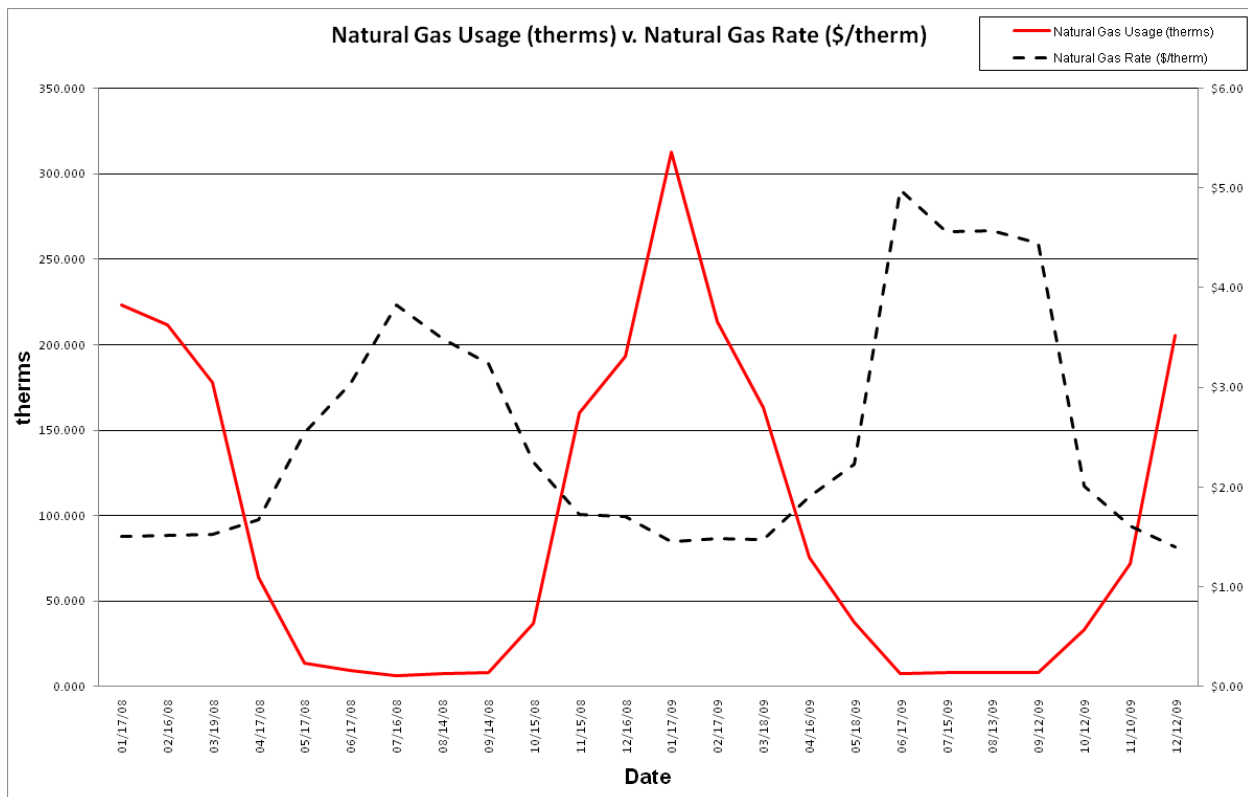
Billing analysis shows price fluctuations of over 20% over the course of the year for the building's electrical and natural gas accounts. This may be reflective of the utility tariffs under which the building owner secures its' energy supply. These tariffs often include seasonally adjusted demand charges, or seasonally adjusted usage charges which reflect the markets for the underlying energy commodity. For example, a utility often has tariffs which charge more for electricity in the summer when demand for capacity is high and, the marginal producer of electricity is a higher cost generator who otherwise would not be running in the winter, or shoulder seasons.

Buildings which have a large variation in monthly billing rates can often reduce the costs associated with energy procurement by selecting a third party energy supplier who can provide them with fixed pricing over the course of a contract term as well as attain purchasing economies which may not be available on a utilities default tariff (basic generation service in the case of electric and basic gas service in the case of natural gas).

SWA/BSG-PMK also recommends that the Township of Middletown contact third party energy suppliers in order to negotiate a lower electricity rate. Comparing the current electric rate to average utility rates of similar type buildings in New Jersey, it may be possible to save up to \$ 0.04/kWh, which would have equated to \$1,240 for the past 12 months. Comparing the current natural gas rate to average utility rates of similar type buildings in New Jersey, it may be possible to save up to \$0.07/kWh, which would have equated to \$85 for the past 12 months. Contact the NJ Energy Choice Program for further information on companies that can act as third party (non-utility) energy suppliers. Purchasing energy from a third party supplier can reduce price fluctuations and can ultimately reduce the annual cost of energy for the facility. Appendix B contains a complete list of third party energy suppliers.



Electricity prices generally reflect electricity usage



Natural gas prices and usage levels fluctuate over the course of the year

7. METHOD OF ANALYSIS

7.1 Assumptions and tools

Energy modeling tool: Established / standard industry assumptions, E-Quest
Cost estimates: RS Means 2009 (Facilities Maintenance & Repair Cost Data)
RS Means 2009 (Building Construction Cost Data)
RS Means 2009 (Mechanical Cost Data)
Published and established specialized equipment material and labor costs.
Cost estimates also based on utility bill analysis and prior experience with similar projects

7.2 Disclaimer

This engineering audit was prepared using the most current and accurate fuel consumption data available for the site. The estimates that it projects are intended to help guide the owner toward best energy choices. The costs and savings are subject to fluctuations in weather, variations in quality of maintenance, changes in prices of fuel, materials, and labor, and other factors. Although we cannot guarantee savings or costs, we suggest that you use this report for economic analysis of the building and as a means to estimate future cash flow.

THE RECOMMENDATIONS PRESENTED IN THIS REPORT ARE BASED ON THE RESULTS OF ANALYSIS, INSPECTION, AND PERFORMANCE TESTING OF A SAMPLE OF COMPONENTS OF THE BUILDING SITE. ALTHOUGH CODE-RELATED ISSUES MAY BE NOTED, BSG-PMK AND SWA STAFF HAVE NOT COMPLETED A COMPREHENSIVE EVALUATION FOR CODE-COMPLIANCE OR HEALTH AND SAFETY ISSUES. THE OWNER(S) AND MANAGER(S) OF THE BUILDING(S) CONTAINED IN THIS REPORT ARE REMINDED THAT ANY IMPROVEMENTS SUGGESTED IN THIS SCOPE OF WORK MUST BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS THAT APPLY TO SAID WORK. PARTICULAR ATTENTION MUST BE PAID TO ANY WORK WHICH INVOLVES HEATING AND AIR MOVEMENT SYSTEMS, AND ANY WORK WHICH WILL INVOLVE THE DISTURBANCE OF PRODUCTS CONTAINING MOLD, ASBESTOS, OR LEAD.

LIGHTING ANALYSIS

Middletown Township
Health Department
3 Penelope Lane

Bsg

BIRDSALL SERVICES GROUP
ENGINEERS & CONSULTANTS

Upgrade Code	Upgrade Description	Existing		Proposed		Lighting		
		Fixture	Watts	Fixture	Watts	Total # of Upgrades	Cost per Upgrade (\$)	SmartStart Rebate per Upgrade
1	75W Incandescent Lamp / Replace with 20W Compact Fluorescent	75W INCANDESCENT	75	No Upgrade	75	3	\$10.00	\$0.00
2	60W Incandescent Lamp / Replace with 13W Compact Fluorescent	60W INCANDESCENT	60	13W CF/SI	15	15	\$10.00	\$0.00
3	LED Exit Sign / No Upgrade	LED	2	No Upgrade	2	0	\$40.00	\$10.00
4	(4) 4' 34W T12 Lamps, Magnetic Ballasts / Retrofit with T8 Lamps, Electronic Ballast	4L4' EE/STD	160	4L4' T8/ELEC	110	7	\$90.00	\$15.00
5	(2) 4' 34W T12 Lamps, Magnetic Ballasts / Retrofit with T8 Lamps, Electronic Ballast	2L4' EE/STD	80	2L4' T8/ELEC	61	12	\$60.00	\$15.00
6	26W Compact Fluorescent / No Upgrade	26W CF/SI	28	No Upgrade	28	8	\$0.00	\$0.00
7	1F34T12 2'	(1) F20T12/HPFMAG	32	(1) FO17T8/EEMAG	24	2	\$0.00	\$0.00
8	(2) 8' T12 Lamps, Magnetic Ballasts / Retrofit with T8 Lamps, Electronic Ballast	2L8' EE/STD	138	2L8' T8/ELEC	118	0	\$80.00	\$15.00
9						0	\$0.00	\$0.00
10						0	\$0.00	\$0.00
11						0	\$0.00	\$0.00
12						0	\$0.00	\$0.00

Summary

Cost	\$1,530.00	\$0.00	\$1,530.00
Rebate	\$285.00	\$0.00	\$285.00
Net Cost	\$1,245.00	\$0.00	\$1,245.00
Savings (kWh)	2,089	0	2,089
Savings (\$)	\$396.83	\$0.00	\$396.83
Payback	3.1		3.1

Variables:

\$0.19	Avg. Electric Rate (\$/kWh)
	Avg. Demand Rate (\$/kW)
2080	Operating Hours/Year
8	Operating Hours/Work Day

Notes:

Assumptions:

25%	Occupancy Sensor Savings (Avg)
40%	Occupancy Sensor Savings(>Avg)

													Lighting						Occupancy Sensors (ONLY)						Lighting & Occupancy Sensors				
Seq. #	Upgrade Code	Room/Area	Hrs/ Work Day	Hrs/ Year	Existing				Proposed			KW Reduction	Energy Savings, kWh	Cost (\$)	Savings (\$)	Payback (yrs)	Controls		Energy Savings, kWh	Cost (\$)	Savings (\$)	Payback (yrs)	SmartStart Rebate		Energy Savings, kWh	Post- Rebate Cost (\$)	Savings (\$)	Payback (yrs)	
					Fixture	Qty.	Watts	Foot Candles	Fixture	Qty.	Watts						Type	Qty.					Lighting	Sensors					
Totals:					3493							2224	1.269	2089	\$1,530.00	\$396.83	3.9			0	\$0.00	\$0.00		\$285.00	\$0.00	2089	\$1,245.00	\$396.83	3.1
1	1	Outside	7	1820	75W INCANDESC	2	150		No Upgrade	2	150	0	0	\$20.00	\$0.00			0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$20.00	\$0.00			
2	2	Outside	7	1820	60W INCANDESC	3	180		13W CF/SI	3	45	0.135	246	\$30.00	\$46.68	0.6		0	\$0.00	\$0.00		\$0.00	\$0.00	246	\$30.00	\$46.68	0.6		
3	3	Exit	24	8760	LED		0		No Upgrade									0	\$0.00	\$0.00			\$0.00						
4	4	Lobby Office	14	3640	4L4' EE/STD	3	480		4L4' T8/ELEC	3	330	0.15	546	\$270.00	\$103.74	2.6		0	\$0.00	\$0.00		\$45.00	\$0.00	546	\$225.00	\$103.74	2.2		
5	5	Office 1	8	2080	2L4' EE/STD	4	320		2L4' T8/ELEC	4	244	0.076	158	\$240.00	\$30.04	8.0		0	\$0.00	\$0.00		\$60.00	\$0.00	158	\$180.00	\$30.04	6.0		
6	2	Corridor	14	3640	60W INCANDESC	2	120		13W CF/SI	2	30	0.09	328	\$20.00	\$62.24	0.3		0	\$0.00	\$0.00		\$0.00	\$0.00	328	\$20.00	\$62.24	0.3		
7	5	Office 2	8	2080	2L4' EE/STD	1	80		2L4' T8/ELEC	1	61	0.019	40	\$60.00	\$7.51	8.0		0	\$0.00	\$0.00		\$15.00	\$0.00	40	\$45.00	\$7.51	6.0		
8	5	Office 3	8	2080	2L4' EE/STD	2	160		2L4' T8/ELEC	2	122	0.038	79	\$120.00	\$15.02	8.0		0	\$0.00	\$0.00		\$30.00	\$0.00	79	\$90.00	\$15.02	6.0		
9	2	Restroom	4	1040	60W INCANDESC	1	60		13W CF/SI	1	15	0.045	47	\$10.00	\$8.89	1.1		0	\$0.00	\$0.00		\$0.00	\$0.00	47	\$10.00	\$8.89	1.1		
10	4	Office 4	8	2080	4L4' EE/STD	2	320		4L4' T8/ELEC	2	220	0.1	208	\$180.00	\$39.52	4.6		0	\$0.00	\$0.00		\$30.00	\$0.00	208	\$150.00	\$39.52	3.8		
11	4	Office 5	8	2080	4L4' EE/STD	2	320		4L4' T8/ELEC	2	220	0.1	208	\$180.00	\$39.52	4.6		0	\$0.00	\$0.00		\$30.00	\$0.00	208	\$150.00	\$39.52	3.8		
12	6	Office 5	8	2080	26W CF/SI	2	56		No Upgrade	2	56	0	0	\$0.00	\$0.00			0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
13	5	Office 6	8	2080	2L4' EE/STD	4	320		2L4' T8/ELEC	4	244	0.076	158	\$240.00	\$30.04	8.0		0	\$0.00	\$0.00		\$60.00	\$0.00	158	\$180.00	\$30.04	6.0		
14	6	Office 6	8	2080	26W CF/SI	6	168		No Upgrade	6	168	0	0	\$0.00	\$0.00			0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
15	7	Bathroom	4	1040	(1) F20T12/HPFM	2	64		(1) FO17T8/EEMA	2	48	0.016	17	\$0.00	\$3.16	0.0		0	\$0.00	\$0.00		\$0.00	\$0.00	17	\$0.00	\$3.16	0.0		
16	1	Bathroom	4	1040	75W INCANDESC	1	75		No Upgrade	1	75	0	0	\$10.00	\$0.00			0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$10.00	\$0.00			
17	2	Closet	0.5	130	60W INCANDESC	4	240		13W CF/SI	4	60	0.18	23	\$40.00	\$4.45	9.0		0	\$0.00	\$0.00		\$0.00	\$0.00	23	\$40.00	\$4.45	9.0		
18	2	Basement	0.5	130	60W INCANDESC	5	300		13W CF/SI	5	75	0.225	29	\$50.00	\$5.56	9.0		0	\$0.00	\$0.00		\$0.00	\$0.00	29	\$50.00	\$5.56	9.0		
19	5	Basement	0.5	130	2L4' EE/STD	1	80		2L4' T8/ELEC	1	61	0.019	2	\$60.00	\$0.47	127.8		0	\$0.00	\$0.00		\$15.00	\$0.00	2	\$45.00	\$0.47	95.9		
20	8	Basement	0.5	130	2L8' EE/STD		0		2L8' T8/ELEC									0	\$0.00	\$0.00			\$0.00						

Appendix B: Third Party Energy Suppliers (ESCOs)

Third Party Electric Suppliers for PSEG Service Territory	Telephone & Web Site	Third Party Gas Suppliers for Elizabethtown Gas Co. Service Territory	Telephone & Web Site
Hess Corporation 1 Hess Plaza Woodbridge, NJ 07095	(800) 437-7872 www.hess.com	Cooperative Industries 412-420 Washington Avenue Belleville, NJ 07109	(800) 628-9427 www.cooperativenet.com
American Powernet Management, LP 437 North Grove St. Berlin, NJ 08009	(877) 977-2636 www.americanpowernet.com	Direct Energy Services, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	(866) 547-2722 www.directenergy.com
BOC Energy Services, Inc. 575 Mountain Avenue Murray Hill, NJ 07974	(800) 247-2644 www.boc.com	Gateway Energy Services Corp. 44 Whispering Pines Lane Lakewood, NJ 08701	(800) 805-8586 www.gesc.com
Commerce Energy, Inc. 4400 Route 9 South, Suite 100 Freehold, NJ 07728	(800) 556-8457 www.commerceenergy.com	UGI Energy Services, Inc. 704 East Main Street, Suite 1 Moorestown, NJ 08057	(856) 273-9995 www.ugienergyservices.com
ConEdison Solutions 535 State Highway 38 Cherry Hill, NJ 08002	(888) 665-0955 www.conedsolutions.com	Great Eastern Energy 116 Village Riva, Suite 200 Princeton, NJ 08540	(888) 651-4121 www.greateastern.com
Constellation NewEnergy, Inc. 900A Lake Street, Suite 2 Ramsey, NJ 07446	(888) 635-0827 www.newenergy.com	Glacial Energy of New Jersey, Inc. 207 LaRoche Avenue Harrington Park, NJ 07640	(877) 569-2841 www.glacialenergy.com
Credit Suisse, (USA) Inc. 700 College Road East Princeton, NJ 08450	(212) 538-3124 www.creditsuisse.com	Hess Corporation 1 Hess Plaza Woodbridge, NJ 07095	(800) 437-7872 www.hess.com
Direct Energy Services, LLC 120 Wood Avenue, Suite 611 Iselin, NJ 08830	(866) 547-2722 www.directenergy.com	Intelligent Energy 2050 Center Avenue, Suite 500 Fort Lee, NJ 07024	(800) 724-1880 www.intelligentenergy.org
FirstEnergy Solutions 300 Madison Avenue Morristown, NJ 07926	(800) 977-0500 www.fes.com	Metromedia Energy, Inc. 6 Industrial Way Eatontown, NJ 07724	(877) 750-7046 www.metromediaenergy.com
Glacial Energy of New Jersey, Inc. 207 LaRoche Avenue Harrington Park, NJ 07640	(877) 569-2841 www.glacialenergy.com	MxEnergy, Inc. 510 Thornall Street, Suite 270 Edison, NJ 08837	(800) 375-1277 www.mxenergy.com
Metro Energy Group, LLC 14 Washington Place Hackensack, NJ 07601	(888) 536-3876 www.metroenergy.com	NATGASCO (Mitchell Supreme) 532 Freeman Street Orange, NJ 07050	(800) 840-4427 www.natgasco.com
Integrus Energy Services, Inc. 99 Wood Ave, South, Suite 802 Iselin, NJ 08830	(877) 763-9977 www.integrusenergy.com	Pepco Energy Services, Inc. 112 Main Street Lebanon, NJ 08833	(800) 363-7499 www.pepco-services.com
Liberty Power Delaware, LLC Park 80 West Plaza II, Suite 200 Saddle Brook, NJ 07663	(866) 769-3799 www.libertypowercorp.com	PPL EnergyPlus, LLC 811 Church Road Cherry Hill, NJ 08002	(800) 281-2000 www.pplenergyplus.com
Liberty Power Holdings, LLC Park 80 West Plaza II, Suite 200 Saddle Brook, NJ 07663	(800) 363-7499 www.libertypowercorp.com	South Jersey Energy Company One South Jersey Plaza, Route 54 Folsom, NJ 08037	(800) 756-3749 www.southjerseyenergy.com
Pepco Energy Services, Inc. 112 Main St. Lebanon, NJ 08833	(800) 363-7499 www.pepco-services.com	Sprague Energy Corp. 12 Ridge Road Chatham Township, NJ 07928	(800) 225-1560 www.spragueenergy.com
PPL EnergyPlus, LLC 811 Church Road Cherry Hill, NJ 08002	(800) 281-2000 www.pplenergyplus.com	Woodruff Energy 73 Water Street Bridgeton, NJ 08302	(800) 557-1121 www.woodruffenergy.com
Sempra Energy Solutions 581 Main Street, 8th Floor Woodbridge, NJ 07095	(877) 273-6772 www.semprasolutions.com		
South Jersey Energy Company One South Jersey Plaza, Route 54 Folsom, NJ 08037	(800) 756-3749 www.southjerseyenergy.com		
Sprague Energy Corp. 12 Ridge Road Chatham Township, NJ 07928	(800) 225-1560 www.spragueenergy.com		
Strategic Energy, LLC 55 Madison Avenue, Suite 400 Morristown, NJ 07960	(888) 925-9115 www.sel.com		
Suez Energy Resources NA, Inc. 333 Thornall Street, 6th Floor Edison, NJ 08837	(888) 644-1014 www.suezenergyresources.com		
UGI Energy Services, Inc. 704 East Main Street, Suite 1 Moorestown, NJ 08057	(856) 273-9995 www.ugienergyservices.com		