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**Local Government Energy Program
DRAFT -Energy audit report**

For

***Lawrence Township
Senior Center
14 Mulford Avenue
Cedarville, NJ 08311***

Project Number: LGEA47



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INTRODUCTION

On January 19th, 2010, Steven Winter Associates, Inc. (SWA) and BSG-PMK performed an energy audit and assessment of the Lawrence Township Senior Center in Cedarville, NJ. Current conditions and energy-related information were collected in order to analyze and facilitate the implementation of energy conservation measures for the building.

The Lawrence Township Senior Center is a 2,476 sqft., single-story building constructed in the 2000. The building consists of a large community room, a full kitchen, a pantry, men's and ladies A.D.A. restrooms, three offices, a screened in porch, and a mechanical room. The overall condition of the building was found to be well maintained and in good condition.

The Senior Center is occupied consistently by 1 to 3 employees for 20-25 hours a week.

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/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 building.

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 that additional 25% will also be paid by the program. The Board of Public Utilities (BPU's) Office of Clean Energy has assigned TRC Energy Services to administer the Program.

EXECUTIVE SUMMARY

This document contains the energy audit report for the Lawrence Township Senior Center located at 14 Mulford Avenue Cedarville, NJ 08311.

Based on the field visit performed by Steven Winter Associates (SWA) and BSG-PMK staff on January 19th, 2010 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 electric data collected, December, 2008 through November, 2009, the Senior Center consumed a total of 54,127 kWh of electricity for a total cost of \$9,220; in the most recent full year of natural gas data collected, December, 2008 through November, 2009, 2,410 therms of gas were consumed for a total cost of \$3,536. With electricity and natural gas combined, the building consumed 426 MMBtus of energy at a total cost of \$12,756.

SWA/BSG-PMK has entered energy information about the Senior Center in the U.S. Environmental Protection Agency's (EPA) *Energy Star Portfolio Manager* Energy benchmarking system. The building performance rating was not able to be determined because the building use is classified as Other-Social/Meeting in the Portfolio Manager system. 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). SWA/BSG-PMK encourages the Township of Lawrence to continue entering utility data in *Energy Star Portfolio Manager* in order to track weather normalized source energy use over time.

The Site Energy Use Intensity is 172.0 kBtu/ft²yr which is considerably high compared to the national average of a social/meeting space building consuming 52.0 kBtu/ft²yr. The electric utility is the higher component of this elevated site energy use and may be attributed occupant specific needs as well as possibly leaving equipment and lighting on during unoccupied times. Implementing the recommendations included in this report will reduce the building energy consumption by approximately 33.5 kBtu/ft²yr. Additional reductions may be obtained through improved discretionary operations. There may be energy procurement opportunities for the Senior Center to reduce annual utility costs, which are \$1,100/yr higher, when compared to the average estimated NJ commercial utility rates.

Based on the assessment of the Lawrence Township Senior Center, SWA/BSG-PMK has separated the recommendations into three categories (See Section 4 for more details). These are summarized as follows:

Category I Recommendations: Capital Improvements:

- The gas fired domestic water heater, installed in 1999, is nearing the end of its useful life and should be replaced with a high-efficiency, gas-fired replacement. Due to low cost savings resulting in a long payback yielded from upgrading the existing gas water heater to a more efficient gas water heater, this could not be recommended as an ECM.

Category II: Operations & Maintenance:

Based on SWA/BSG-PMK's findings the building and systems were found to be well maintained. SWA/BSG-PMK recommends implementing a maintenance plan to include filter replacements, water heater drain down, condenser coil cleaning, exhaust fan lubrication and belt adjustments, as well as bi-annual exterior and interior building inspections.

Category III: Energy Conservation Measures:

At this time, SWA/BSG-PMK highly recommends a total of **3** Energy Conservation Measures (ECMs) for the Senior Center that are summarized in the following tables. The total investment cost for these ECMs, with incentives, is **\$8,388**. SWA/BSG-PMK estimates a first year savings of **\$1,543** with an aggregated simple payback of **5.4 years**. SWA/BSG-PMK estimates that implementing the highly recommended ECMs will reduce the carbon footprint of the Senior Center by **12,325 lbs of CO₂**.

There are various incentives that the Senior Center could apply for that could also help lower the cost of installing the ECMs. SWA/BSG-PMK recommends that Lawrence 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.

ROI: Return on Investment (%)

Assumptions:

Discount rate:	3.2% per DOE FEMP guidelines	Electricity rate	\$0.17 \$/kWh
Energy price escalation rate:	0% per DOE FEMP guidelines	Gas rate	\$1.47 \$/therm

Avg. Annual Demand: 0.002762

Area of Building (SF)

2,476

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	\$78	\$0	\$78	518	0.12	0	0.71	\$0	\$88	15	\$1,036	0.89	8186%	546%	113%	\$973	709
	Occupancy Sensors		\$520	\$210	\$310	153	0.04	0	0.21	\$0	\$26	10	\$219	11.94	-293%	-29%	-3%	-\$89	209
2	High-Efficiency Modulating Furnaces	Contractor	\$20,000	\$16,000	\$4,000	0	0.00	738	29.80	\$0	\$1,085	18	\$14,668	3.69	1482%	82%	26%	\$8,948	8,633
TOTAL			\$20,598	\$16,210	\$4,388	671	0.15	738	30.72	\$0.00	\$1,199	-	\$15,923	3.66	-	-	-	\$9,832	9,551

Table 2 - Recommended Extended 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	Upgrade (2) Condensing Units	Contractor	\$20,000	\$16,000	\$4,000	2,025	0.47	0.00	2.79	\$0	\$344	15	\$4,050	11.62	8%	1%	3%	\$109	2,774
TOTAL			\$20,000	\$16,000	\$4,000	2,025	0.47	0	2.79	\$0.00	\$344	-	\$4,050	11.62	-	-	-	\$109	2,774

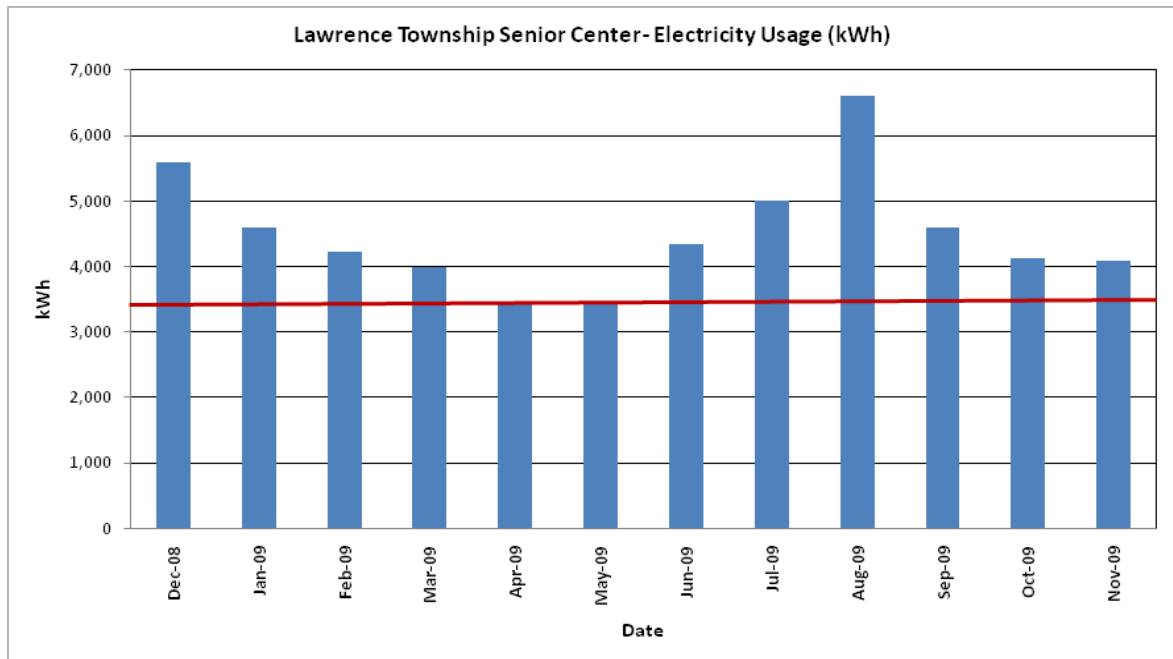
1. HISTORIC ENERGY CONSUMPTION

1.1. Energy Usage and Cost Analysis

SWA/BSG-PMK analyzed utility bills that were received from the utility companies supplying the Senior Center with electric and natural gas from December 2008 to December 2009.

Electricity – The Senior Center is currently served by one electric meter. The Senior Center currently receives electricity from Atlantic City Electric at **an average rate of \$0.170/kWh** based on 12 months of utility bills from December 2008 to November 2009. The Senior Center building consumed **approximately 54,127 kWh or \$9,220 worth of electricity** in the previous year with an average monthly demand of 12.5 kW.

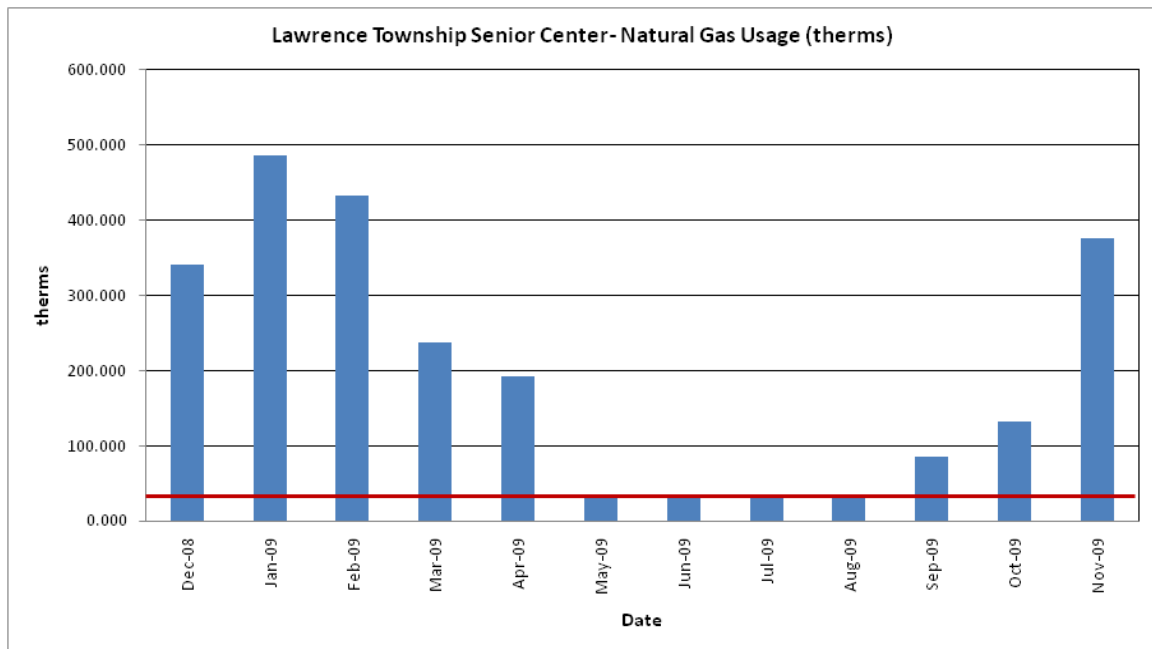
The following charts show electricity usage for The Senior Center based on utility bills from December 2008 through November 2009.



The red line indicates the baseload for electrical usage throughout the period identified.

Natural Gas – The Senior Center is currently served by one meter for natural gas. The Senior Center currently receives natural gas from South Jersey Gas at **an average aggregated rate of \$1.467/therm** based on 12 months of utility bills for December 2008 to November 2009. The Senior Center consumed **approximately 2,410 therms or \$3,536 worth of natural gas** in the previous year.

The following charts show the natural gas usage for the Senior Center based on utility bills for the year from December 2008 through November 2009



The natural gas usage mimics seasonal needs for heating the buildings showing that natural gas is used primarily for heating. The red line indicates the baseload level for heading, domestic hot water, and cooking needs. The natural gas usage above the redline shows the amount of natural gas used for heating.

1.2. Utility Rate

The Senior Center currently receives electricity from Atlantic City Electric at a general service market rate for electricity use with a separate demand charge . The Senior Center currently pays an average rate of approximately \$0.170/kWh based on the most recent 12 months of utility bills from December 2008 through November 2009.

Lawrence Township currently receives natural gas supply from South Jersey Gas at a general service market rate for natural gas. There is one gas meter that provides natural gas service to the Senior Center building. The average aggregated rate (supply and transport) for the meter is approximately \$1.467/therm based on 12 months of utility bills for December 2008 to November 2009.

1.3. Energy Benchmarking

SWA/BSG-PMK has entered energy information about the Senior Center in the U.S. Environmental Protection Agency's (EPA) *Energy Star Portfolio Manager* Energy benchmarking system. The username is *lawrencetownship* and the password is *lawrence*. The building performance rating was not able to be determined because the building use is classified as Other-Social/Meeting in the Portfolio Manager system.

The Site Energy Use Intensity is 172.0 kBtu/ft²yr compared to the national average of a social/meeting space building consuming 52.0 kBtu/ft²yr. Implementing the recommendations included in this report will reduce the building energy consumption by approximately 33.5 kBtu/ft²yr.

SWA/BSG-PMK has created the Portfolio Manager site information for Lawrence Township Senior Center. This information can be accessed at: <https://www.energystar.gov/istar/pmpam/>, with the following:

Username: lawrencetownship
Password: lawrence



STATEMENT OF ENERGY PERFORMANCE

Senior Center

Building ID: 2245773

For 12-month Period Ending: November 30, 2009¹

Date SEP becomes ineligible: N/A

Date SEP Generated: March 18, 2010

Facility

Senior Center
14 Mulford Ave
Cedarville, NJ 08311

Facility Owner

Lawrence Township of Cumberland
County
357 Main St
Cedarville, NJ 08311

Primary Contact for this Facility

Ruth Dawson
357 Main St
Cedarville, NJ 08311

Year Built: 2000

Gross Floor Area (ft²): 2,476Energy Performance Rating² (1-100) N/A**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	184,765
Natural Gas (kBtu) ⁴	241,022
Total Energy (kBtu)	425,787

Energy Intensity⁵

Site (kBtu/ft ² /yr)	172
Source (kBtu/ft ² /yr)	351

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	41
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Electric Distribution Utility

Pepco - Atlantic City Electric Co

National Average Comparison

National Average Site EUI	52
National Average Source EUI	102
% Difference from National Average Source EUI	244%
Building Type	Social/Meeting

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 Lawrence Township Senior Center is a 2,476 sqft, single-story building constructed in the 2000. The building consists of a large community room, a full kitchen, a pantry, men's and ladies A.D.A. restrooms, three offices, a screened in porch, and a mechanical room. The overall condition of the building was found to be well maintained and in good condition.

2.2. Building Occupancy Profiles

The Senior Center is occupied consistently by 1 to 3 employees for 20-25 hours a week.

2.3. Building envelope

2.3.1.Exterior Walls

The exterior walls of the Senior Center are a wood stud construction with R-11 batt insulation. The exterior is finished with ½" exterior grade plywood sheathing, vapor barrier, ¾" rigid insulation and horizontal vinyl siding. The front entryway is finished with face brick. The interior of the walls are finished with drywall and paint. The porch area is framed with pressure treated lumber. Exterior and interior finishes of the envelope were found to be in good condition and without cracks or signs of water damage.

2.3.2.Roof

The main roof is a pre engineered wood truss system with ½" exterior grade plywood sheathing, 15# felt, and fiberglass Shingles. The sheathing is covered with 36" of ice and water shield from the gutter line and there is a ridge and soffit vent system. The attic floor is insulated with R-30 batt insulation. The roof, soffit, gutters and fascia boards are in good condition.

2.3.3.Base

The base of the building consists of a 1' x 2' continuous reinforced concrete footing with solid 8" concrete masonry units. The floor is 4" poured concrete on compacted fill and vapor barrier. There are no signs of water damage, improper drainage, or compromised structure.

2.3.4.Windows

There are thirteen - 5/8" double pane thermally broken aluminum clad casement windows throughout the building. The screened in porch has pressure treated window frames with screening. The windows and screens are original and in good condition.



(Photo showing new thermo pane windows.)

2.3.5.Exterior Doors

The Senior Center has two sets of double exterior aluminum medium style store front doors. The main entry has a factory applied white finish and the doors leading to the screened porch are aluminum finish. There is one additional exterior door leading off the kitchen that is a hollow metal insulated door. All doors and hardware were found to be in good working order with functioning latches and good weather stripping.

2.3.6.Building Air Tightness

The building's air tightness is in good condition. There was some mention of cold complaints with regard to perimeter floor area, but this may be due to the nature of the overhead heating. There were no other complaints from the occupants about drafts or cold spots.

2.4. HVAC systems

2.4.1.Heating

Heat is provided by three 80% efficient gas-fired York forced-air furnaces. The units are interlocked with two motorized dampers that provide combustion air to the mechanical room. The building distribution is divided up as having the Eastern exposure on unit #1, and the Central and Western exposures on unit #'s 2 and 3. Temperature set point is maintained by programmable wall-mounted thermostats. All systems are relative new and found to be in good working order.

Category III Recommendation – ECM #2: Replace the current furnaces with high-efficiency, modulating furnaces.



2.4.2.Cooling

Each of the three furnaces is equipped with a five ton evaporator coil. The cooling coils are fed from three individual 5-ton condensing units located on the north side of the building. Two of these units are York models, which were installed in 1997, and the other unit is a Ducane unit, installed in 2006. Similarly, the cooling set point is maintained by wall mounted programmable thermostats. The condenser units were found to be in good operating condition.



Category III Recommendation - ECM #3:

Replace the York condensing units with units that use energy-efficient Puron refrigerant, as opposed to the current R-22.

2.4.3. Ventilation

The three furnaces introduce a total of 1,100 CFM of conditioned outside air to the space. There are two exhaust fans; EF-1 provides a total 280 CFM of exhaust for the men's and ladies rooms. EF-2 provides 800 CFM of exhaust for the kitchen fume hood. EF-1 is vented to the East side of the building and EF-2 is vented to the North face of the building. Both were found to be in good working order.

2.4.4. Domestic Hot Water

The building's domestic hot water is supplied by a gas fired 40 gallon Bradford White water heater.

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 energy and cost savings.

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. Also recommend installing lighting sensors to certain areas where lights typically remain lit when unoccupied for long periods of time.

Category III Recommendation - ECM #1: Recommend upgrading all incandescent lamps with their compact fluorescent equivalents, as well as various other lighting upgrades outlined in Appendix A. Also recommend installing lighting sensors to certain areas where lights typically remain lit when unoccupied for long periods of time.

2.5.2. Generator

The building has an Olympian 40.0 kW pad-mounted diesel emergency generator. The unit is set up to provide emergency power for lighting, and vital equipment. The generator was not tested however it was found to be in good physical condition.

2.5.3. Appliances and Process

Appliances, such as refrigerators, that are over 10 years of age should be replaced with newer efficient models with the Energy Star label. For example, Energy Star refrigerators use as little as 315 kWh/yr. When compared to the average electrical consumption of older equipment, Energy Star equipment results in a large savings. Building management should select Energy Star label appliances and equipment when replacing: refrigerators, printers, computers, copy machines, etc. More information can be found in the "Products" section of the Energy Star website at: <http://www.energystar.gov>. The building is currently equipped with energy vending miser devices for conserving energy usage by Drinks and Snacks vending machines. When equipped with the vending miser devices, vending machines use less energy and are comparable in daily energy performance to new Energy Star qualified machines.

The building has a full kitchen including; (1) commercial Vulcan stove/oven, (1) microwave, (1) commercial Hobart Refrigerator /Freezer, (1) coffee machine, (1) three bay sanitizing sink, (1) water treatment system. All equipment was found to be in like new condition.

The building has total of (4) computers, (1) copy machine / printer, (1) scanner and (1) spreader.

2.5.4.Elevators

This is a single story structure that does not have an elevator.

3. Building Systems Equipment List

Building System	Description	Locations	Model #	Fuel	Space Served	Year Installed	Estimtaed. Remaining Useful Life %
DHW	40 gallon, 40 MBH water heater	Mechanical room	Bradford White, M# M1403S6EN12, S# TJ6677383	Natural Gas	Entire building	1999	15%
Heating	(3) forced-air furnaces w/ cooling coils, 130/105 MBH input/output (2 in use, 2 zones)	Mechanical room	York Diamond 80, M# P3HUD20N10401C, S# ENHM901276	Natural Gas	Entire building	1999	39%
Cooling	CU-3: 5-ton condensing unit, 13 SEER	Outside	Ducane, M# 2AC15B60-T, S# 4606H54261	Electricity	Furnaces	2006	73%
Cooling	CU-1, 2: (2) 5-ton condensing units, 10 SEER	Outside	York, M# H1RA060S25A, S# WGHP281824, WGHP275031	Electricity	Furnaces	2000	33%
Ventilation	Exhaust fan, 1/4 HP, 1,800 RPM, 280 CFM	Roof	Greenheck, type BSQ, size 70	Electricity	RR exhaust	2000	50%
Ventilation	Direct-drive exhaust fan, 1/4 HP, 1,626 RPM, 800 CFM	Roof	FloAire, M# DU-25	Electricity	Kitchen hood	2000	50%
Appliances	Stove	Kitchen	Vulcan	Natural Gas	Kitchen	2000	50%
Appliances	Refrigerator/freezer	Kitchen	Hobert	Electricity	Kitchen	2000	50%
Appliances	Microwave	Kitchen	GE	Electricity	Kitchen	2000	50%
Electrical	Emergency generator, 50 KVA/40 kW	Exterior pad-mounted	Olympian, M# D40P3	Diesel	Lighting	2007	75%

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 this building, SWA/BSG-PMK have separated the investment opportunities into three categories of recommendations:

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 Improvements:

- The domestic water heater, installed in 1999, is nearing the end of its useful life and should be replaced with a high-efficiency, gas-fired replacement. Due to low cost savings resulting in a long payback yielded from upgrading the existing gas water heater to a more efficient gas water heater, this could not be recommended as an ECM.

Category II: Operations & Maintenance:

Based on SWA/BSG-PMK's findings the building and systems were found to be well maintained. SWA/BSG-PMK recommends implementing a maintenance plan to include filter replacements, water heater drain down, condenser coil cleaning, exhaust fan lubrication and belt adjustments, as well as bi-annual exterior and interior building inspections. Category III Recommendations: Energy Conservation Measures:

Summary table

ECM #	Description
1	Lighting Upgrades
2	High-Efficiency Modulating Furnaces
3	Upgrade (2) Condensing Units

ECM #1: Lighting Upgrade & Occupancy Sensors

Description:

Lighting at the Senior Center primarily consists of energy-efficient T8 lamps with electronic ballasts. The existing T8s do not need to be upgraded. Also in the building are incandescent lamps, which should be replaced with longer lasting, more efficient compact fluorescent lamps. Some fixtures have already been upgraded to compact fluorescents already. In addition, occupancy sensors should be installed to control the lighting in the director's office and the office area. Lighting replacements have short paybacks because of the low cost of the project combined with the high daily use of the lights.

Recommended lighting upgrades are detailed in Appendix A.

Installation cost:

Summary	Lighting (Only)	Sensors (Only)	Complete Lighting Upgrade
Cost	\$78.00	\$520.00	\$598.00
Rebate	\$0.00	\$210.00	\$210.00
Net Cost	\$78.00	\$310.00	\$388.00
Savings (kWh)	518	153	671
Savings (\$)	\$88.02	\$25.96	\$113.99
Payback	0.9	11.9	3.4

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	Thermal, 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, \$	CO2 Reduced, lbs/yr
1	Lighting Upgrades	Empirical Data	\$78	\$0	\$78	518	0.12	0	0.71	\$0	\$88	15	\$1,036	0.89	8186%	546%	113%	\$973	709
	Occupancy Sensors		\$520	\$210	\$310	153	0.04	0	0.21	\$0	\$26	10	\$219	11.94	-293%	-29%	-3%	-\$89	209

Assumptions:

The electric cost used in this ECM was \$0.170/kWh, which was the facilities' average rate for the 12-month period from December, 2008 through November, 2009. The replacements for each lighting fixture, the costs to replace or retrofit each one, and the rebates and wattages for each fixture are located in Appendix A.

Rebates/financial incentives:

The New Jersey SmartStart offers rebates for upgrading lighting fixtures and installing lighting controls. The total rebate this ECM qualifies for is \$210.

ECM#2: High-Efficiency Modulating Furnaces

Description:

The Senior Center is heated by three 130-MBH, gas-fired furnaces. One of these furnaces is not in use for heating. The furnaces are nearing the end of their 18-year useful life, and the two that are in use should be replaced. Higher-efficiency modulating furnaces are now available, which are up to 95% efficient. The current units were 80% efficient at the time of their purchase, but due to their age and condition, were estimated to decrease by 10%, to 70%.

Installation cost:

Estimated installed cost: \$10,000 for each furnace, \$20,000 total

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 Modulating Furnaces	Contractor	\$20,000	\$16,000	\$4,000	0	0.00	535	21.60	\$0	\$786	18	\$10,634	5.09	921%	51%	18%	\$5,387	6,258

Assumptions:

The cost per therm of natural gas was \$1.47, taken from twelve months of the Senior Center's energy bills. The annual heating consumption for the building, 2,410 therms, was also obtained from the energy bills. In the summer months between June and September, the building's heating consumption was consistently between 30 and 32 therms, so the average for these four months, 31 therms, can be assumed to be the monthly consumption used by the water heater and the stove, which would not vary in with the change in outdoor temperature. The savings were calculated using the following series of equations:

Current gas input: $2,410 \text{ therms} - 31 \text{ therms} \times 12 \text{ months} = 2,033 \text{ therms}$

Current/proposed gas output: $2,033 \text{ therms} \times 70\% = 1,423 \text{ therms}$

Proposed gas input: $\frac{1,423 \text{ therms}}{95\%} = 1,498 \text{ therms}$

Savings: $2,033 \text{ therms} - 1,498 \text{ therms} = 535 \text{ therms}$

Rebates/financial incentives:

This ECM is calculated based on a projected eligibility for New Jersey's Direct Install Rebate, which pays up to 80% of the total installation cost for the furnaces, or \$16,000 for this measure.

ECM#3: Upgrade (2) Condensing Units

Description:

Cooling is provided to the Senior Center by two, 5-ton York condensing units and one 5-ton Ducane condensing unit. The condensing units feed cooling coils in the furnaces that were recommended for replacement in ECM #2. The York condensing units are nearing the end of their 15-year useful life, and should be replaced. Units are now available with Seasonal Energy Efficiency Ratios (SEERs) as high as 21. The original SEER for the current units was 10; due to the age and condition of the units, their SEER was assumed to be 85% of the original value, or 8.5.

Installation cost:

\$10,000 each, \$20,000 total

Source of estimate: Contractor

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	Upgrade (2) Condensing Units	Contractor	\$20,000	\$16,000	\$4,000	2,025	0.47	0	2.79	\$0	\$344	15	\$4,050	11.62	8%	1%	3%	\$109	2,774

Assumptions:

Using the facility's electricity bills from December, 2008 through November, 2009, it was determined that the cost of electricity is currently \$0.170/kWh. This ECM was calculated using 65°F as a change-over temperature from heating to cooling. The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) estimates 1,104 cooling degree-days on average per year for a region that only exceeds a dry-bulb temperature of 92°F for 0.4% of the year. Due to the fact that the Senior Center only operates 25 hours, or 15%, of the work week, only 15% of the 1,104 cooling degree days were used for these calculations. The desired indoor temperature during the cooling season was assumed to be 74°F. The following equation, the degree-day equation for cooling systems, was used to calculate the electric consumptions of the current and proposed air-conditioners:

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

Rebates/financial incentives:

This ECM is calculated based on a projected eligibility for New Jersey's Direct Install Rebate, which pays up to 80% of the total installation cost, or \$16,000 for this measure.

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 was considered for installation on the roof and grounds of the Lawrence Township Senior Center. Based on the shading and the amount of roof and land area available it was determined that PV installations are not cost effective for this project.

5.3. Solar Thermal Collectors

Solar thermal collectors are not recommended due to the low amount of domestic hot water use throughout the building.

5.4. Combined Heat and Power

Combined Heat Power 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.

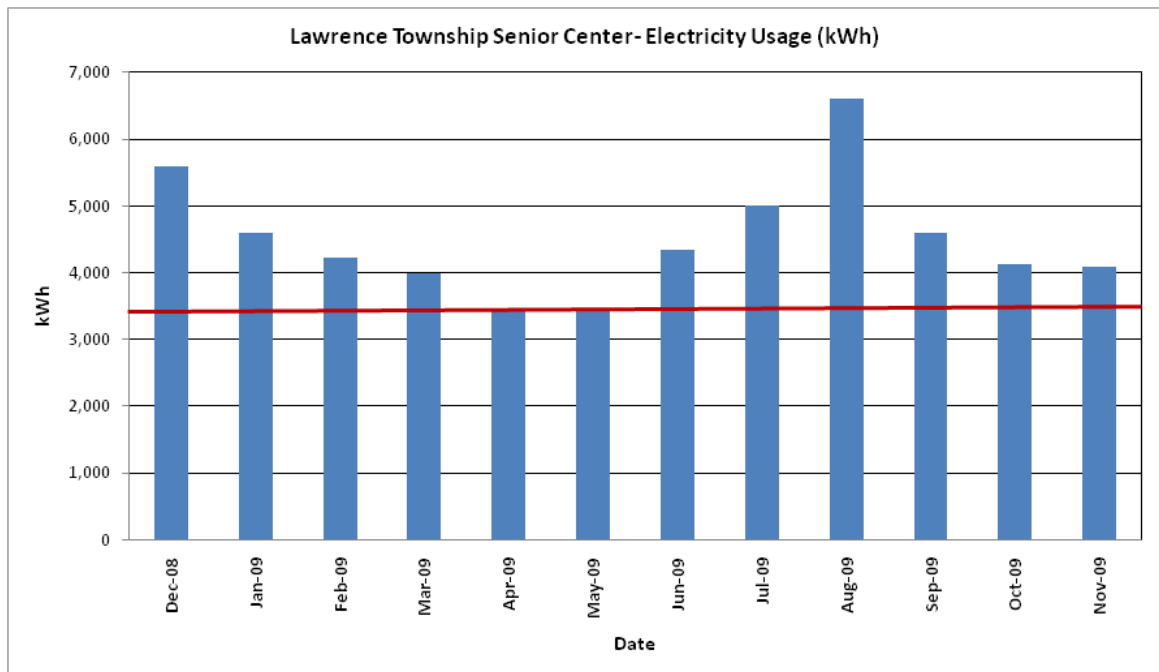
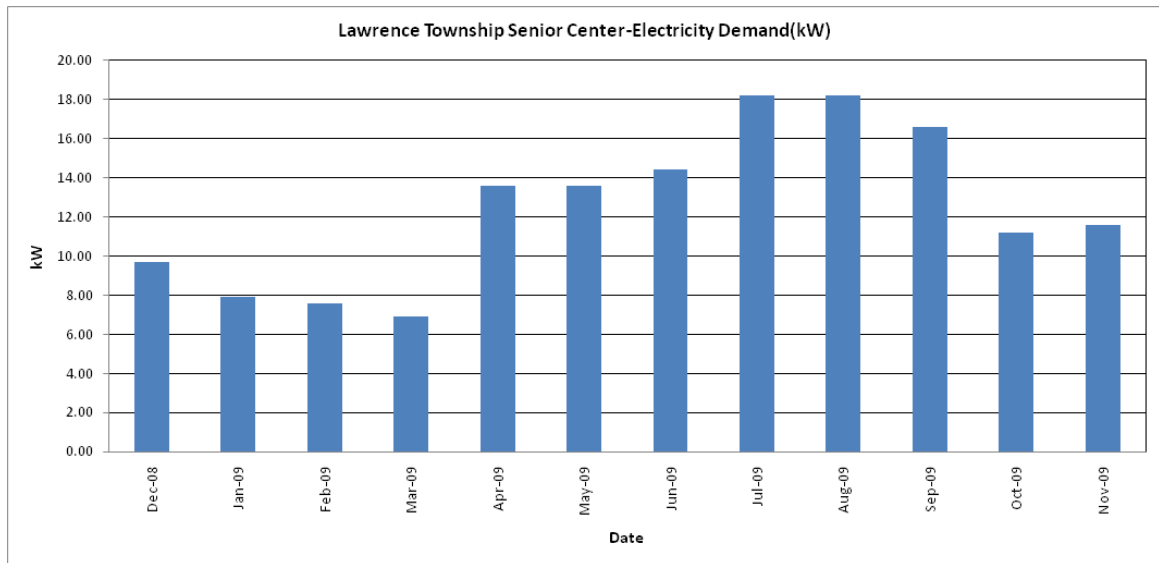
5.6. Wind

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.

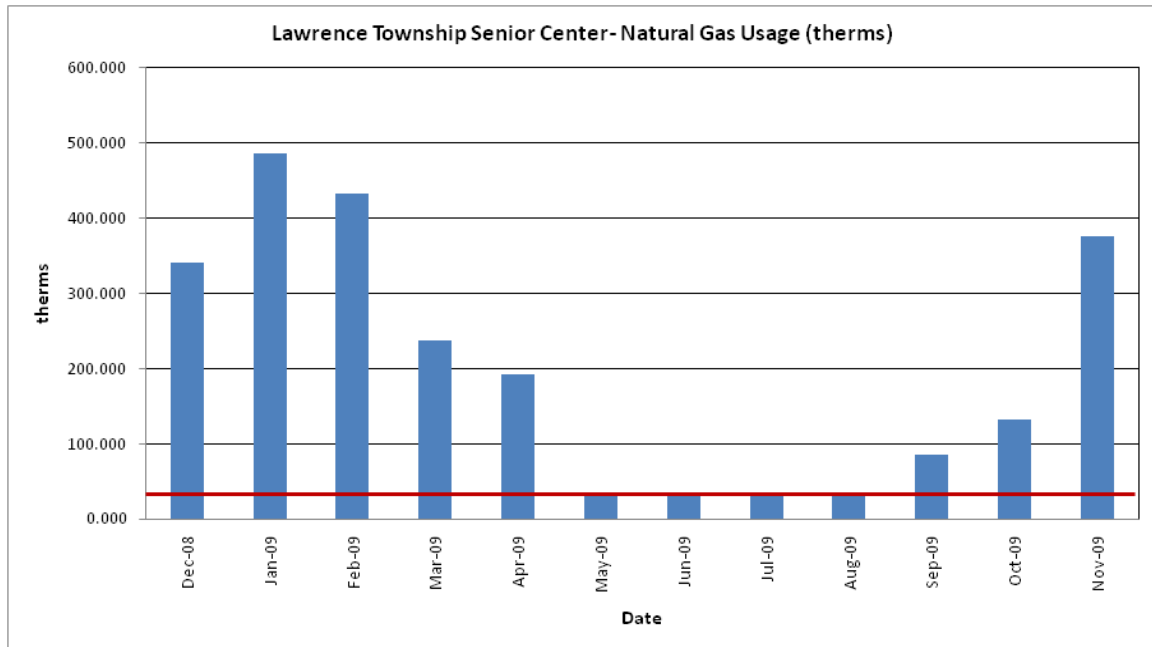
6. ENERGY PURCHASING AND PROCUREMENT STRATEGIES

6.1. Energy Purchasing

The average electrical peak demand for the previous year was 12.5 kW and the maximum peak demand was 18.2 kW. The electric and gas load profiles for this project are presented in the following charts. The first chart shows electric demand (in kW) for the previous 12 months and the other two charts show electric and gas usage (in kWh), respectively.



The electrical demand peaks (except for a few fluctuations) follow the electrical consumption peaks. The red line indicates the baseload for electrical usage throughout the period identified.



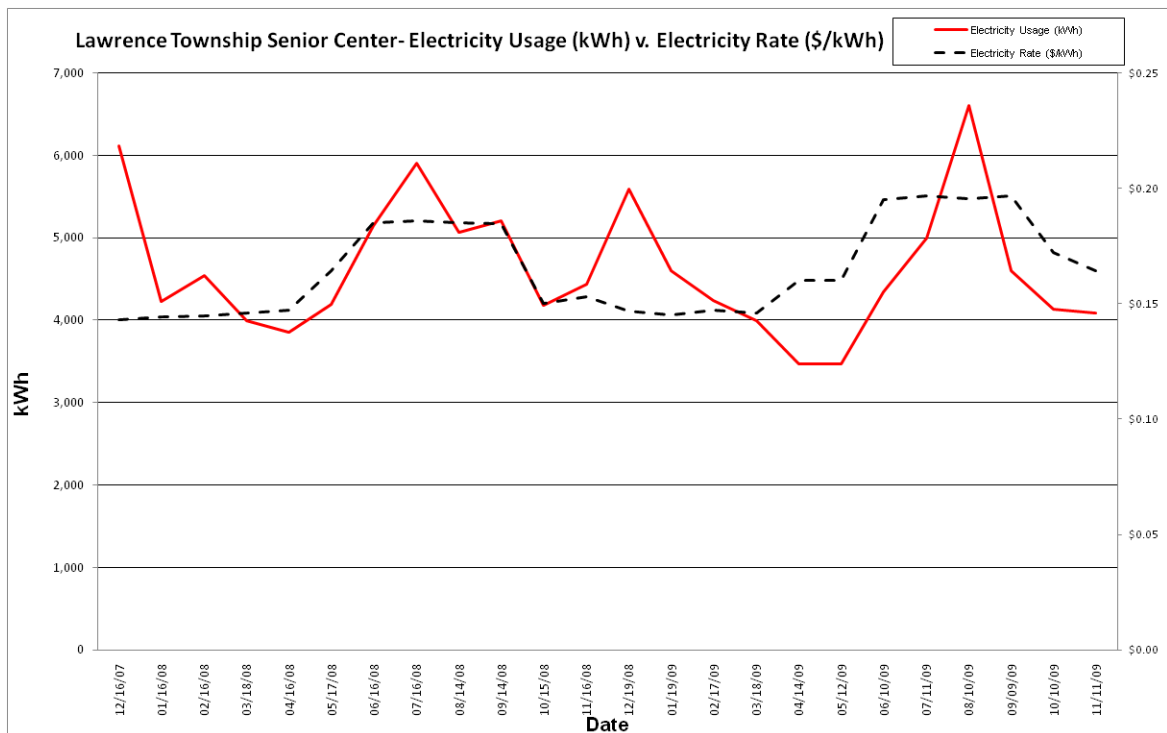
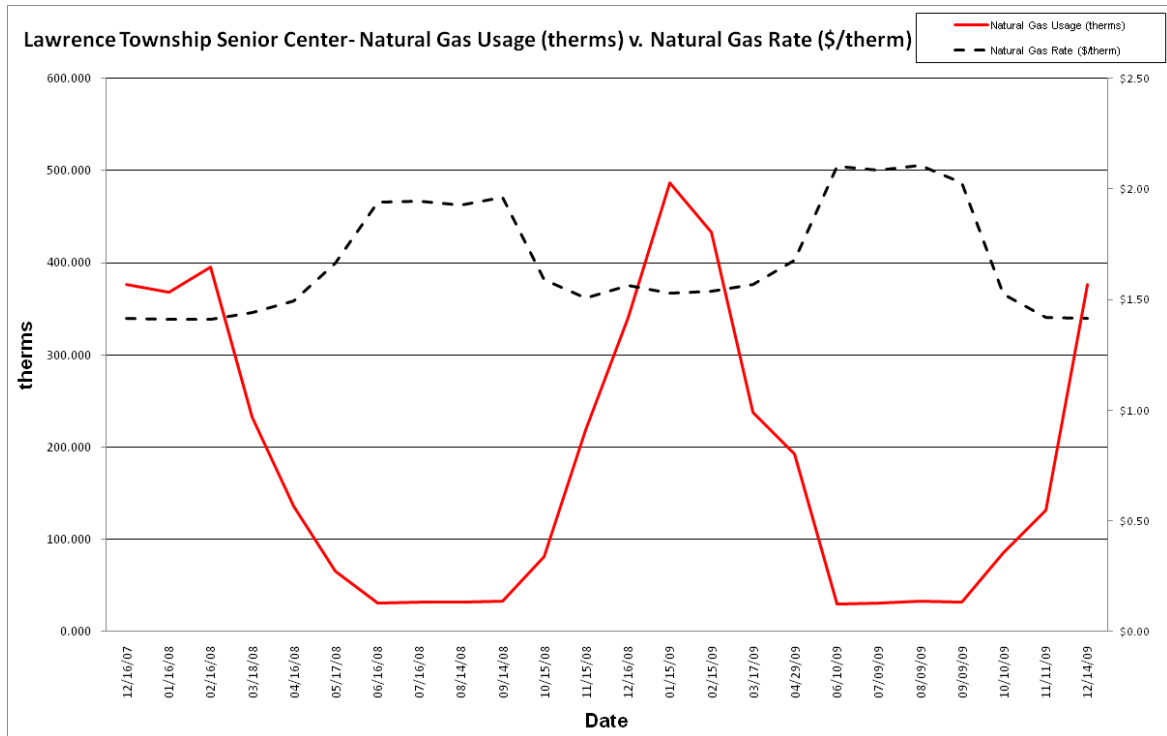
The natural gas usage mimics seasonal needs for heating the buildings showing that natural gas is used primarily for heating. The red line indicates the baseload level for heading, domestic hot water, and cooking needs. The natural gas usage above the redline shows the amount of natural gas used for heating.

6.2. Tariff Analysis

Currently, natural gas is provided via one gas meter with South Jersey Gas serving as transmission and supply provider. The general service rate for natural gas charges a market-rate price based on use and the Lawrence Township Senior Center billing data does not breakdown demand costs for all periods. Typically, the natural gas prices increase during the heating months when natural gas is used by the furnace and unit heaters.

The Lawrence Township Senior Center is direct-metered (via one main meter) and currently purchases electricity from Atlantic City Electric at a general service rate. The general service rate for electric charges are market-rate based on use and the Senior Center's billing does show a breakdown of demand costs. Demand prices are reflected in the utility bills and can be verified by observing the price fluctuations throughout the year. Typically, the electricity prices increase during the cooling months when electricity is used by the HVAC condensing units and air handlers.

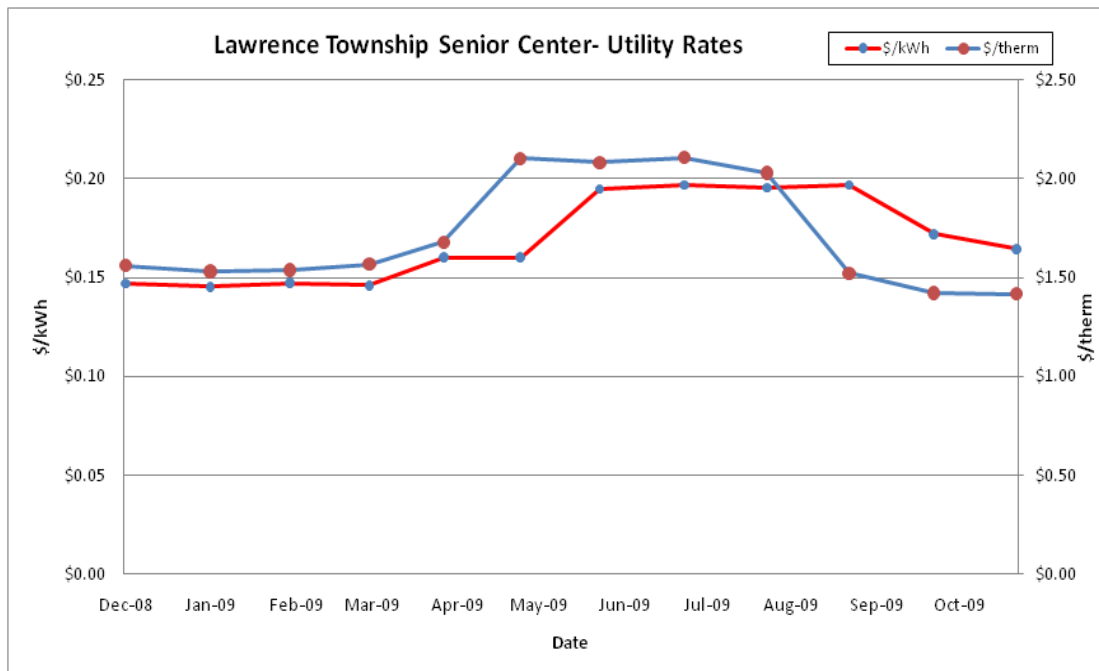
The following charts compare the utility consumption and utility rates for the natural gas and electricity over the previous two year period.



6.3. Energy Procurement strategies

Billing analysis shows that the rate paid is lower than estimated state averages over the course of the year for the Senior Center natural gas account. Changing to a third party suppliers could reduce the cost associated with energy procurement. Customers that have a large variation in monthly billing rates can often reduce the costs associated with energy procurement by selecting a third party energy supplier. Contact the NJ Energy Choice Program for further information on Energy Services Companies (ESCOs) that can act as third party energy suppliers. Appendix B contains a complete list of third party energy suppliers.

SWA/BSG-PMK also recommends that Lawrence Township contacts 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 \$ 0.02/kWh, which would have equated to approximately \$1,100 for the past 12 months. Comparing the current electric rate to the average rate of similar type buildings in New Jersey, Lawrence Township already pays a rate lower than the average.



METHOD OF ANALYSIS

7.1. Assumptions and methods

Energy modeling method: Spreadsheet-based calculation methods

Cost estimates: RS Means 2009 (Facilities Maintenance & Repair Cost Data)

RS Means 2009 (Building Construction Cost Data)

RS Means 2009 (Mechanical Cost Data)

Note: 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, 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

Lawrence Township
Senior Center



Upgrade Code	Upgrade Description	Existing			Proposed			Lighting		
		Fixture	Watts		Fixture	Watts		Total # of Upgrades	Cost per Upgrade (\$)	SmartStart Rebate per Upgrade
1	(3) 32W T8 Lamps, Electronic Ballast / No Upgrade	3L4' T8/ELEC	89		No Upgrade	89		8	\$0.00	\$0.00
2	(1) 32W T8 Lamps, Electronic Ballast / No Upgrade	1L4' T8/ELEC	31		No Upgrade	31		4	\$0.00	\$0.00
3	16W Compact Fluorescent / No Upgrade	18W CF/HW	19		No Upgrade	19		2	\$0.00	\$0.00
4	(4) 32W T8 Lamps, Electronic Ballast / No Upgrade	4L4' T8/ELEC	110		No Upgrade	110		16	\$0.00	\$0.00
5	60W incandescent on Dimmer	60W INCANDESCENT	60		18W CF/HW	19		3	\$6.00	\$0.00
6	(2) 32W T8 Lamps, Electronic Ballast / No Upgrade	2L4' T8/ELEC	61		No Upgrade	61		2	\$0.00	\$0.00
7	Circline Fluorescent Fixture	1L8" (DIA) EE/ELEC HI	30		1L8" (DIA) EE/ELEC	22		1	\$40.00	\$0.00
8	Decorative Wall Mount 100W Incandescent	100W INCANDESCENT	100		26W CF/HW	28		2	\$10.00	\$0.00
9	100W Metal Halide Wall pack / No Upgrade	100W MH/BALLAST	120		No Upgrade	120		3	\$0.00	\$0.00
10	LED Exit Signs	LED	2		No Upgrade	2		5	\$0.00	\$0.00
11								0	\$0.00	\$0.00
12								0	\$0.00	\$0.00

Summary

	Lighting (Only)	Sensors (Only)	Complete Lighting Upgrade
Cost	\$78.00	\$520.00	\$598.00
Rebate	\$0.00	\$210.00	\$210.00
Net Cost	\$78.00	\$310.00	\$388.00
Savings (kWh)	518	153	671
Savings (\$)	\$88.02	\$25.96	\$113.99
Payback	0.9	11.9	3.4

Variables:

\$0.17	Avg. Electric Rate (\$/kWh)
	Avg. Demand Rate (\$/kW)
1144	Operating Hours/Year
4	Operating Hours/Work Day

Assumptions:

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

Notes:

Seq. #	Upgrade Code	Room/Area	Hrs/ Work Day	Hrs/ Year	Existing			Proposed			kW Reduction	Lighting				Controls		Occupancy Sensors (ONLY)				SmartStart Rebate		Lighting & Occupancy Sensors						
					Fixture	Qty.	Watts	Foot Candles	Fixture	Qty.		Watts	Energy Savings, kWh	Cost (\$)	Savings (\$)	Payback (yrs)	Type	Qty.	Energy Savings, kWh	Cost (\$)	Savings (\$)	Payback (yrs)	Lighting	Sensors	Energy Savings, kWh	Post-Rebate Cost (\$)	Savings (\$)	Payback (yrs)		
Totals:					3536						3261	0.275	518	\$78.00	\$88.02	0.9					153	\$520.00	\$25.96	20.0	\$0.00	\$210.00	671	\$388.00	\$113.99	3.4
1	1	Directors Office	4	1144	3L4' T8/ELEC	2	178		No Upgrade	2	178	0	0	\$0.00	\$0.00		OSR	1	51	\$260.00	\$8.65	30.0	\$0.00	\$70.00	51	\$190.00	\$8.65	22.0		
2	1	Womens Room	4	1144	3L4' T8/ELEC	1	89		No Upgrade	1	89	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
3	2	Womens Room	4	1144	1L4' T8/ELEC	2	62		No Upgrade	2	62	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
4	3	Lobby	4	1144	18W CF/HW	2	38		No Upgrade	2	38	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
5	1	Mens Room	4	1144	3L4' T8/ELEC	1	89		No Upgrade	1	89	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
6	2	Mens Room	4	1144	1L4' T8/ELEC	2	62		No Upgrade	2	62	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
7	1	Office Area	4	1144	3L4' T8/ELEC	4	356		No Upgrade	4	356	0	0	\$0.00	\$0.00		OSR	1	102	\$260.00	\$17.31	15.0	\$0.00	\$140.00	102	\$120.00	\$17.31	6.9		
8	4	All Purpose room	4	1144	4L4' T8/ELEC	12	1320		No Upgrade	12	1320	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
9	5	Porch	4	1144	60W INCANDESC	3	180		18W CF/HW	3	57	0.123	141	\$18.00	\$23.92	0.8			0	\$0.00	\$0.00		\$0.00	\$0.00	141	\$18.00	\$23.92	0.8		
10	4	Kitchen	4	1144	4L4' T8/ELEC	4	440		No Upgrade	4	440	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
11	6	Mechanical Room	4	1144	2L4' T8/ELEC	2	122		No Upgrade	2	122	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
12	7	Generator Room	4	1144	1L8" (DIA) EE/EL	1	30		1L8" (DIA) EE/ELE	1	22	0.008	9	\$40.00	\$1.56	25.7			0	\$0.00	\$0.00		\$0.00	\$0.00	9	\$40.00	\$1.56	25.7		
13	8	Exterior	7	2555	100W INCANDES	2	200		26W CF/HW	2	56	0.144	368	\$20.00	\$62.55	0.3			0	\$0.00	\$0.00		\$0.00	\$0.00	368	\$20.00	\$62.55	0.3		
14	9	Exterior	7	2555	100W MH/BALLA	3	360		No Upgrade	3	360	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			
15	10	Exit	24	8760	LED	5	10		No Upgrade	5	10	0	0	\$0.00	\$0.00				0	\$0.00	\$0.00		\$0.00	\$0.00	0	\$0.00	\$0.00			

Appendix B: Third Party Energy Suppliers (ESCOs)

CONECTIV POWER DELIVERY SERVICE TERRITORY

Last Updated: 12/09/09

***CUSTOMER CLASS - R – RESIDENTIAL C – COMMERCIAL I – INDUSTRIAL**

Supplier	Telephone & Web Site	*Customer Class
American Powernet Management, LP 437 North Grove St. Berlin, NJ 08009	(877) 977-2636 www.americanpowernet.com	C ACTIVE
Commerce Energy, Inc. 4400 Route 9 South Suite100 Freehold, NJ 07728	(800) 556-8457 www.commerceenergy.com	C ACTIVE
ConEdison Solutions Cherry Tree Corporate Center 535 State Highway 38 Cherry Hill, NJ 08002	(888) 665-0955 www.conedsolutions.com	C ACTIVE
Constellation NewEnergy, Inc. 900A Lake Street, Suite 2 Ramsey, NJ 07446	(888) 635-0827 www.newenergy.com	C/I ACTIVE
Direct Energy Services, LLC 120 Wood Avenue Suite 611 Iselin, NJ 08830	(866) 547-2722 www.directenergy.com	C/I ACTIVE
FirstEnergy Solutions Corp. 300 Madison Avenue Morristown, NJ 07962	(800) 977-0500 www.fes.com	C/I ACTIVE
Glacial Energy of New Jersey, Inc. 207 LaRoche Avenue Harrington Park, NJ 07640	(877) 569-2841 www.glacialenergy.com	C/I ACTIVE
Hess Corporation 1 Hess Plaza Woodbridge, NJ 07095	(800) 437-7872 www.hess.com	C/I ACTIVE
Liberty Power Delaware, LLC Park 80 West, Plaza II, Suite	(866) 769-3799	C/I

200Saddle Brook, NJ 07663	www.libertypowercorp.com	ACTIVE
Liberty Power Holdings, LLC Park 80 West, Plaza II, Suite 200Saddle Brook, NJ 07663	(866) 769-3799 www.libertypowercorp.com	C/I ACTIVE
Linde Energy Services 575 Mountain Avenue Murray Hill, NJ 07974	(800) 247-2644 www.linde.com	C/I ACTIVE
Palmco Power NJ, LLC One Greentree Centre 10000 Lincoln Drive East Suite 201 Marlton, NJ 08053	(877) 726-5862 www.PalmcoEnergy.com	C/I ACTIVE
Pepco Energy Services, Inc. 112 Main St. Lebanon, NJ 08833	(800) ENERGY-9 (363-7499) www.pepco-services.com	C/I ACTIVE
PPL EnergyPlus, LLC 811 Church Road Cherry Hill, NJ 08002	(800) 281-2000 www.pplenergyplus.com	C/I ACTIVE
Sempra Energy Solutions The Mac-Cali Building 581 Main Street, 8th fl. Woodbridge, NJ 07095	(877) 273-6772 (800) 2- SEMPRA www.semprasolutions.com	C/I ACTIVE
South Jersey Energy Company One South Jersey Plaza, Route 54 Folsom, NJ 08037	(800) 756-3749 www.southjerseyenergy.com	C/I ACTIVE
Strategic Energy, LLC 55 Madison Avenue Suite 400 Morristown, NJ 07960	(888) 925-9115 www.sel.com	C/I ACTIVE
Suez Energy Resources NA, Inc. 333 Thornall Street 6th Floor Edison, NJ 08837	(888) 644-1014 www.suezenergyresources.com	C/I ACTIVE
UGI Energy Services, Inc. 704 East Main Street Suite 1 Moorestown, NJ 08057	(856) 273-9995 www.ugienergyservices.com	C/I ACTIVE

SOUTH JERSEY GAS SERVICE TERRITORY

Last Updated: 12/09/09

***CUSTOMER CLASS - R – RESIDENTIAL C – COMMERCIAL I - INDUSTRIAL**

Supplier	Telephone & Web Site	Customer Class
Cooperative Industries 412-420 Washington Avenue Belleville, NJ 07109	800-6-BUYGAS (6-289427) www.cooperativenet.com	C/I ACTIVE
Direct Energy Services, LLP 120 Wood Avenue, Suite 611 Iselin, NJ 08830	866-547-2722 www.directenergy.com	R/C/I INACTIVE
Gateway Energy Services Corp. 44 Whispering Pines Lane Lakewood, NJ 08701	800-805-8586 www.gesc.com	R/C/I ACTIVE
UGI Energy Services, Inc. d/b/a GASMARK 704 East Main Street, Suite 1 Moorestown, NJ 08057	856-273-9995 www.ugienergyservices.com	C/I ACTIVE
Great Eastern Energy 116 Village Riva, Suite 200 Princeton, NJ 08540	888-651-4121 www.greateastern.com	C/I ACTIVE

Hess Energy, Inc. One Hess Plaza Woodbridge, NJ 07095	800-437-7872 www.hess.com	C/I ACTIVE
Intelligent Energy 2050 Center Avenue, Suite 500 Fort Lee, NJ 07024	800-724-1880 www.intelligentenergy.org	R/C/I ACTIVE
Metromedia Energy, Inc. 6 Industrial Way Eatontown, NJ 07724	877-750-7046 www.metromediaenergy.com	C/I ACTIVE
MxEnergy, Inc. 510 Thornall Street, Suite 270 Edison, NJ 088327	800-375-1277 www.mxenergy.com	R/C ACTIVE
NATGASCO (Mitchell Supreme) 532 Freeman Street Orange, NJ 07050	800-840-4GAS www.natgasco.com	C ACTIVE
Palmco Energy NJ, LLC One Greentree Centre 10000 Lincoln Drive East, Suite 201 Marlton, NJ 08053	877-726-5862 www.PalmcoEnergy.com	C/I ACTIVE
Pepco Energy Services, Inc. 112 Main Street Lebanon, NJ 08833	800-363-7499 www.pepco-services.com	C/I ACTIVE

PPL EnergyPlus, LLC 811 Church Road - Office 105 Cherry Hill, NJ 08002	800-281-2000 www.pplenergyplus.com	C/I ACTIVE
South Jersey Energy Company One South Jersey Plaza, Route 54 Folsom, NJ 08037	800-756-3749 www.sjindustries.com/sje.htm	C/I ACTIVE
Woodruff Energy 73 Water Street Bridgeton, NJ 08302	800- 557-1121 www.woodruffenergy.com	R/C/I ACTIVE