

St. Johns County School District
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www.stjohns.k12.fl.us

Joseph G. Joyner, Ed.D.
Superintendent



MEMORANDUM

TO: Members of the School Board

FROM: Dr. Joseph G. Joyner, Superintendent of Schools

SUBJECT: Request for Acceptance of Report on Status of Energy Program

DATE: April 14, 2009

Background Information: The Facilities & Operations and Business & Fiscal Services Departments worked jointly to negotiate an agreement with Energy Education, Inc. (EEI) to provide an energy management program designed to save the District \$18,000,000.00 over ten years. At the March 25, 2008 School Board Workshop, the Energy Education, Inc. proposal was presented and discussed. This agreement was approved at the July 1st School Board Meeting. The energy savings program includes on-site training and assessments of the District facilities, EEI Specialists to guide and assist the District's implementation, the hiring of an Energy Manager by the District, and third party software used to measure and monitor energy consumption in the District. This energy savings program is a "people-oriented" program focusing on the behavior of people rather than acquiring mechanical systems.

Strategic Plan Impact: Supports the District's Mission Statement by providing appropriate facilities to inspire in all students a passion for lifelong learning.

Educational Impact: The program is intended to reduce operational costs related to utilities therefore increasing dollars available for other school related expenses.

Fiscal Impact: The EEI program is designed to save the district 20 to 30 percent in utility costs. The target net savings after the first year of implementation is \$913,280.00 with a ten year target net savings of \$18,531,186.00. The EEI contract guarantees the savings will exceed the costs of the program.

Recommendation: The Superintendent recommends that the School Board accept the Energy Program Status Report.

Action Required: Approval of the Superintendent's recommendation.

Drafted and submitted for approval by: Al Crutchfield, Energy Manager

Respectfully Submitted,

A handwritten signature in blue ink that reads "Tim Forson".

Tim Forson, Executive Director
For Facilities & Operations

Dr. Joseph G. Joyner, Superintendent of Schools

The St. Johns County School District will inspire in all students a passion for lifelong learning, creating educated and caring contributors to the world.

School Board

Beverly Slough
District 1

Tommy Allen
District 2

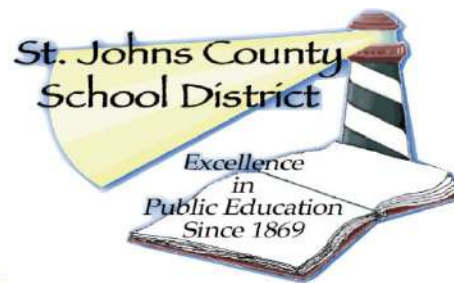
Bill Mignon
District 3

Bill Fehling
District 4

Carla Wright
District 5

Transformational Energy Management Process™

St Johns County School District
July 2008 – January 2009



Primary Goals



Maintain Comfort & Safety in Occupied Areas

Coordinate usage of facilities and monitor operational efficiency of equipment vs. design.

Eliminate Energy Waste

- Audit buildings during unoccupied times.
- Monitor building usage during occupied times
- Track & analyze consumption for building efficiency
- Use web-based tools & diagnostic loggers to track waste
- Maintain energy policy and guidelines

Save Dollars

- Minimize consumption and demand charges
- Audit and monitor utility bills & meters for errors or overcharges
- Evaluate usage trends for abnormalities
- Investigate rebate & grant programs

Total Savings



Energy Savings To Date:

\$ 1,483,262

29.7%

July 2008 – January 2009

Measurement + Verification



Measurement and Verification (M&V) is the terminology used to describe the practice of measuring energy savings and verifying cost avoidance.

We keep score!!

We are using an industry leading M&V tool called EnergyCAP

EnergyCAP meets International Guidelines for M&V

The U.S. Department of Energy headed the effort to develop a written guideline for M&V that became the *International Performance Measurement and Verification Protocol* (U.S. Department of Energy document - DOE/GO-102002-1554)

EnergyCAP is an independent 3rd party software product in full compliance with this guideline.

Measurement + Verification



In order to account for changes from year to year, the guideline prescribes that certain usage adjustments should be made:

Changes in weather

Changes in building square footage and portable buildings

Added/removed mechanical systems and new technology

Differences in the length of billing cycles from month to month

In order to account for changes in cost, the guideline prescribes that changes in Energy Unit Prices should be adjusted for

EnergyCAP uses the Average Unit Cost (AUC) method to account for changes in energy prices between the base period and current reporting period.

All savings is determined by applying the current AUC by meter to the adjusted or expected usage for that meter.

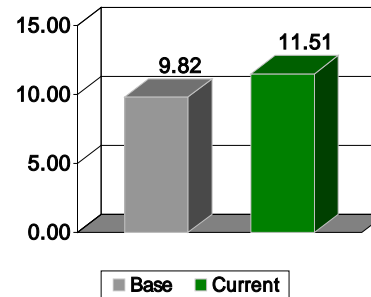
Changes Impacting Energy Cost



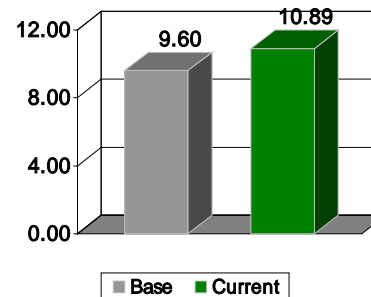
Changes in Energy Unit Costs

Electrical 17.2%
Water/Sewer 13.5%

Electric Unit Cost kWh



Water/Sewer Unit Cost KGal

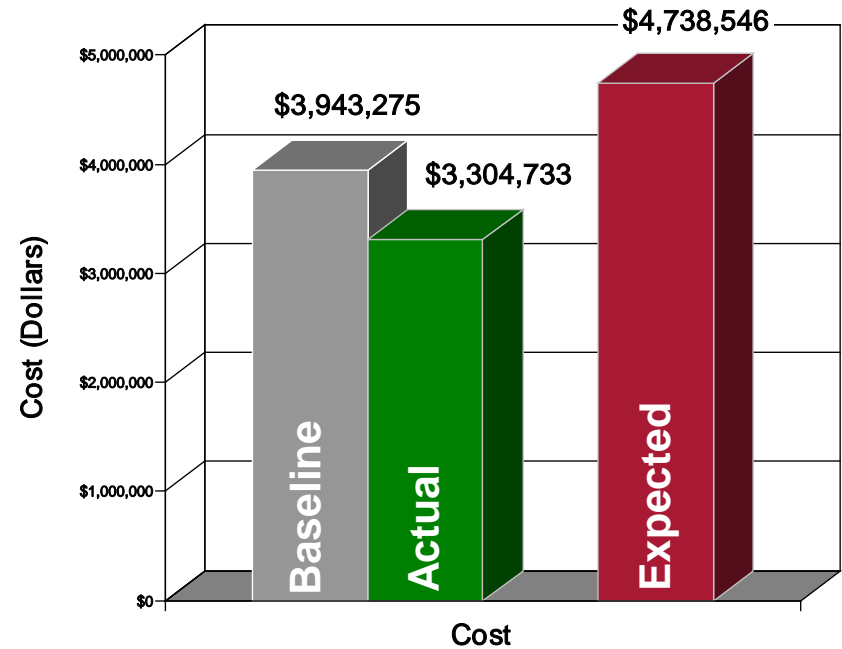
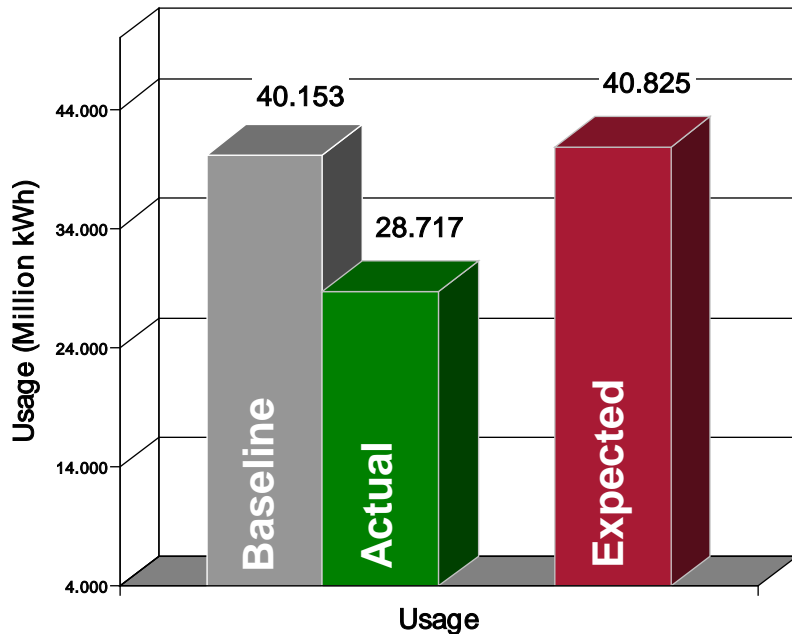


Electric Comparison



ITP + Month 1

Average Unit Cost Increased 17.2%
Total Avoided Use = 12,108,258 kWh
Expected minus Actual = \$1,433,813

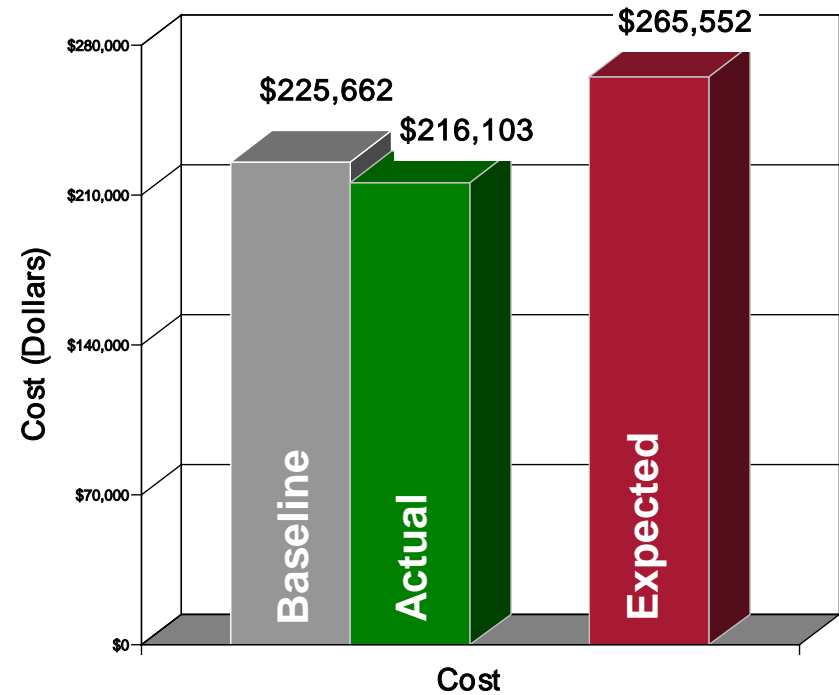
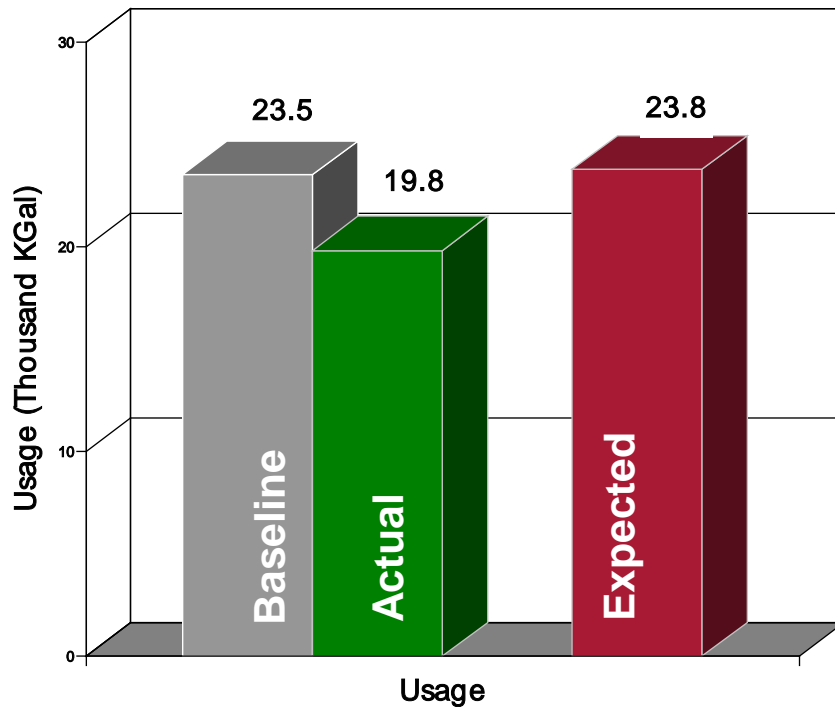


Water/Sewer Comparison

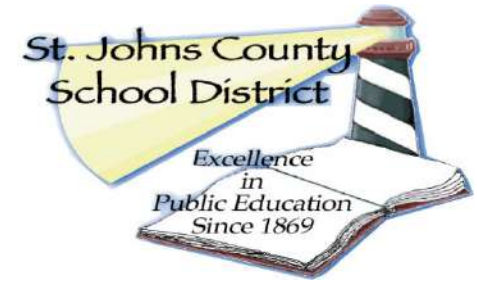


ITP + Month 1

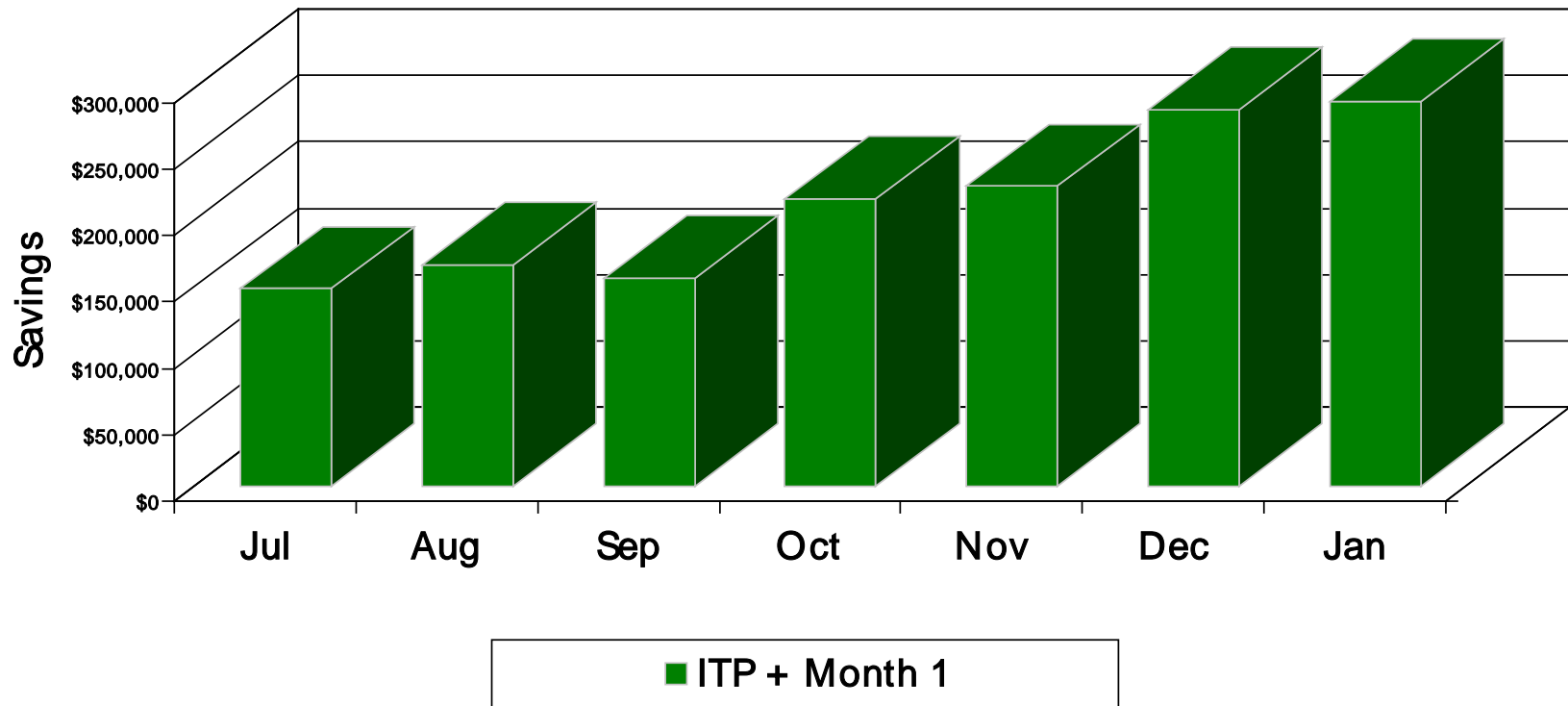
Average Unit Cost Increased 13.5%
Total Avoided Use = 3,939,000 Gallons
Expected minus Actual = \$49,449



Monthly Savings



Total Cumulative savings of \$1,483,262



Environmental Benefits



The EPA reports that the following levels of Greenhouse Gas emissions are produced in our region.

- **1.5 pounds** of carbon dioxide per kWh of Electricity
- **11.7 pounds** of carbon dioxide per Therm of Natural Gas
- **22.4 pounds** of carbon dioxide per Gallon of Heating Oil

Our organization has saved over:

- **12.1 Million** kWh of Electricity

These savings are equal to:

- **7,408 Metric Tons** of carbon dioxide emissions being prevented, or
- **1,330 automobiles** being removed from the highways annually, or
- **189,475** tree seedlings planted and grown for 10-years

In Closing...



What does this mean to our organization?

The savings is the equivalent of over 22 teaching positions!!

The savings has had a positive impact on budget cuts!!

The savings can be redirected to support other programs in our organization!!

The success of the program is due to All Faculty and Staff!!

Special Thanks goes out to:

Custodians for setting back each night

Teachers for reducing energy waste in their classrooms

Principals and Staff for coordinating efforts in their schools