

# Energy Conservation Program Initial Board Report

**Alameda Unified School District**  
**February 2016 through January 2017**



**Cenergistic®**

The Energy Conservation Company®

# Primary Goals

- Eliminate energy waste
- Diagnose comfort issues and work to resolve the root cause — not just the symptoms
- Achieve an “energy conservation culture”
- Save dollars

# A Day in the Life of an Energy Specialist

- Perform 20-25 unoccupied and occupied audits per week – over 346 audits to date
- 49 visits from Cenergistic Engineers to date
- Manage Energy Management Systems, programmable thermostats, and work with Maintenance Team
- Match conditioning times to occupied times
- Strategic planning for extended breaks
- Continuous communication to teachers and staff
- Promote an “energy conservation culture”
- Continually assess and reassess the program

# Measurement & Verification

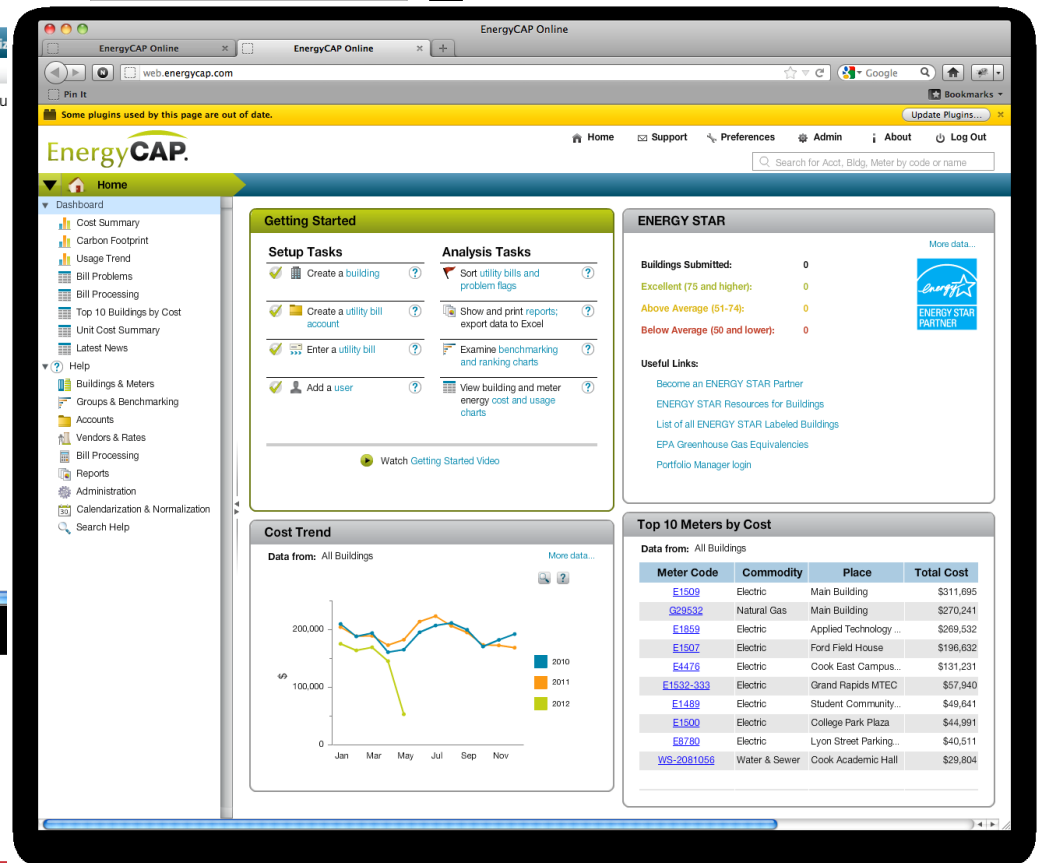
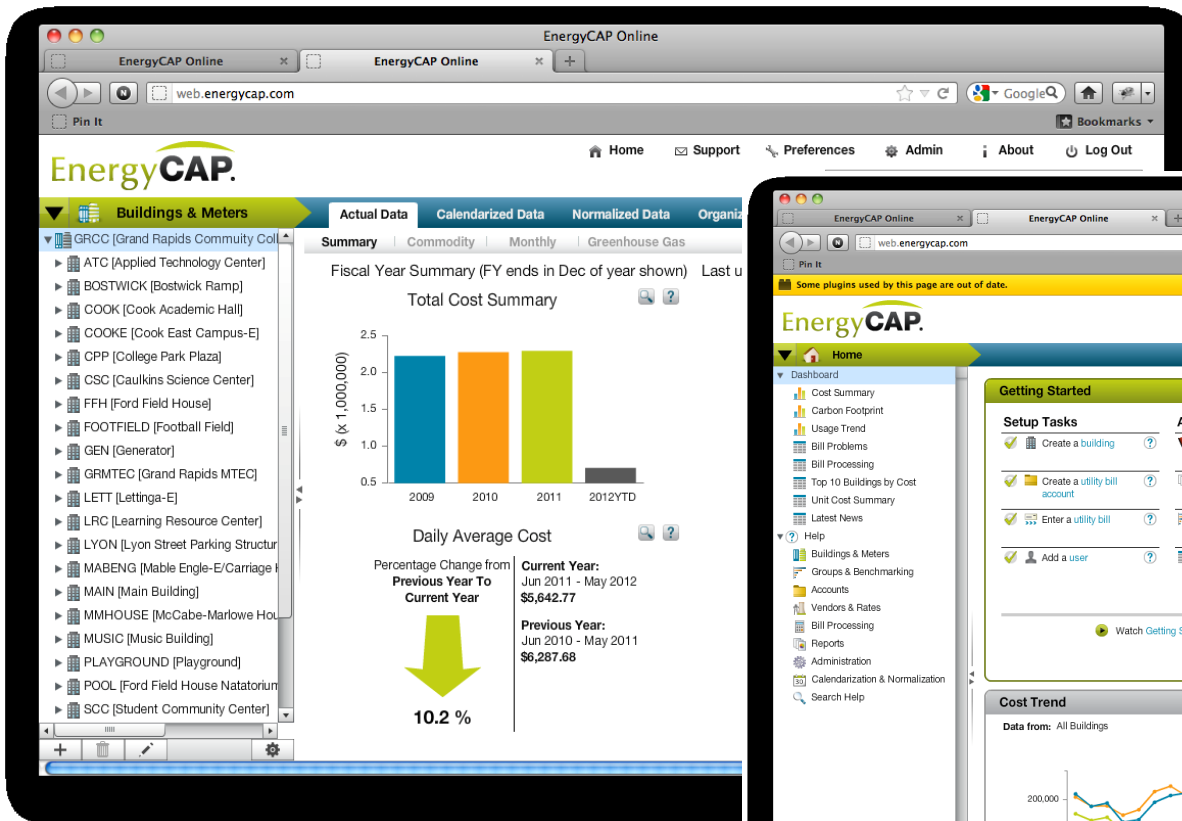
## How we keep score

- Data is entered by Energy Specialist directly from utility bills
- All data, adjustments, and reports produced by EnergyCAP® may be reviewed by district staff

## EnergyCAP adheres to industry standards for measuring savings

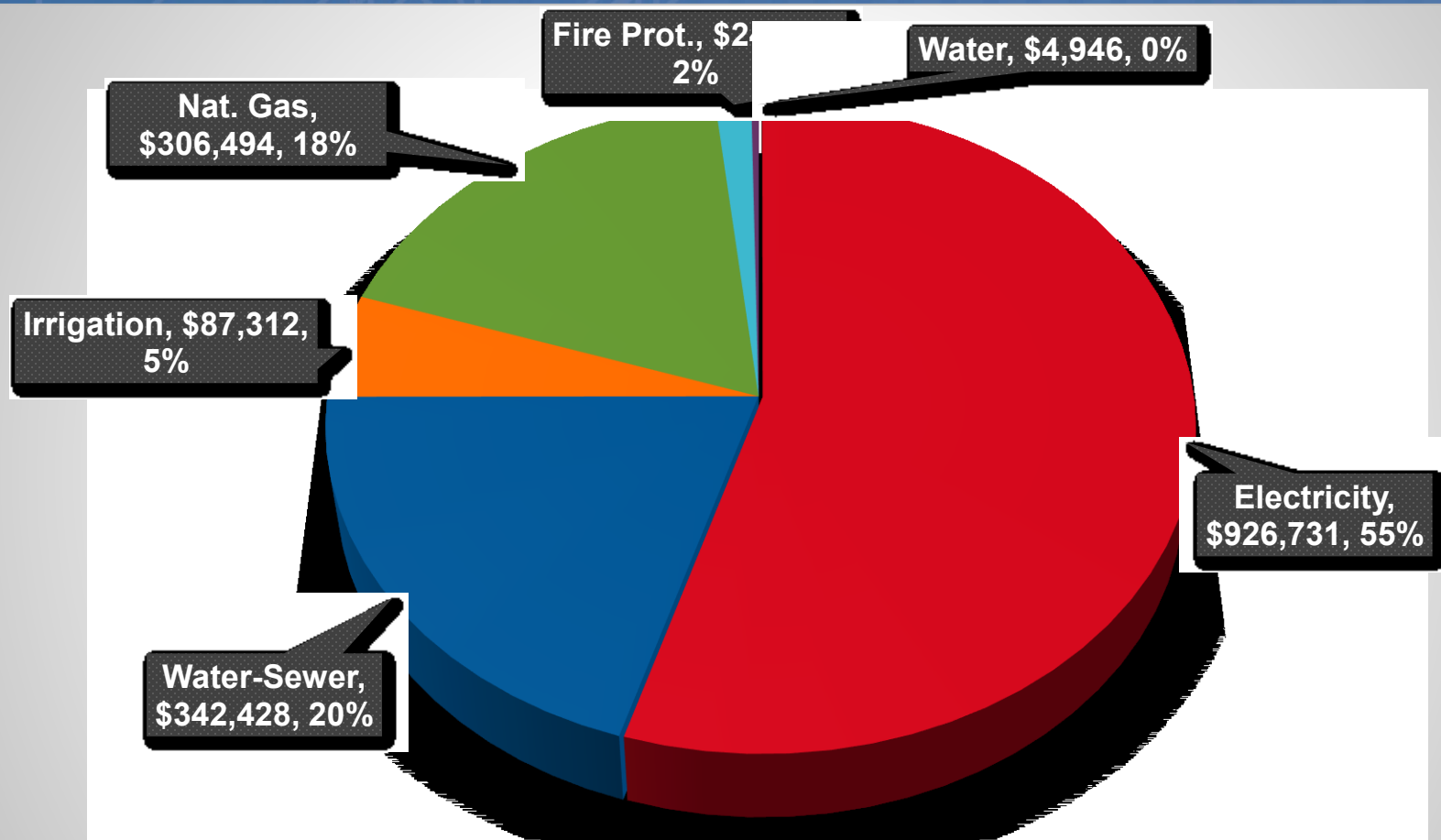
- Adjustments are made to account for non-program variances
- Reports show reduced consumption and savings from behavioral changes

# Technical Analysis



# Utility Cost Distribution

January 2016 – December 2016



**Total Utility Spend: \$1,692,725**

# Changes Impacting Energy Usage

Utility Type	Utility Cost Distribution	Base Year FEB15-JAN16	Current Year FEB16-JAN17	Percent Change
Electrical	54.70%	\$0.15/kWh	0.16/kWh	4.60%
Water/Sewer	18.10%	\$11.09/CCF	\$11.55/CCF	4.10%
Nat. Gas	20.20%	\$0.98/Therm	\$1.06/Therm	8.50%
Irrigation	5.16%	\$4.40/CCF	5.29/CCF	20.22%

**Changes in Energy Unit Costs** (overall costs rising)

## **Changes in Weather and Temperatures**

- Heating Season in savings year 71.3% more severe (colder)
- Cooling Season in savings year 25.25 less severe (cooler) than Base Year

## **Changes in Buildings/Mechanical**

- Bay Farm K-8 School – portable classroom added
- Encinal High – large and small pools filled and operating
- Lum Elementary – new rooftop unit (RTU)
- Boilers started much earlier in the school year

# Electrical Comparison

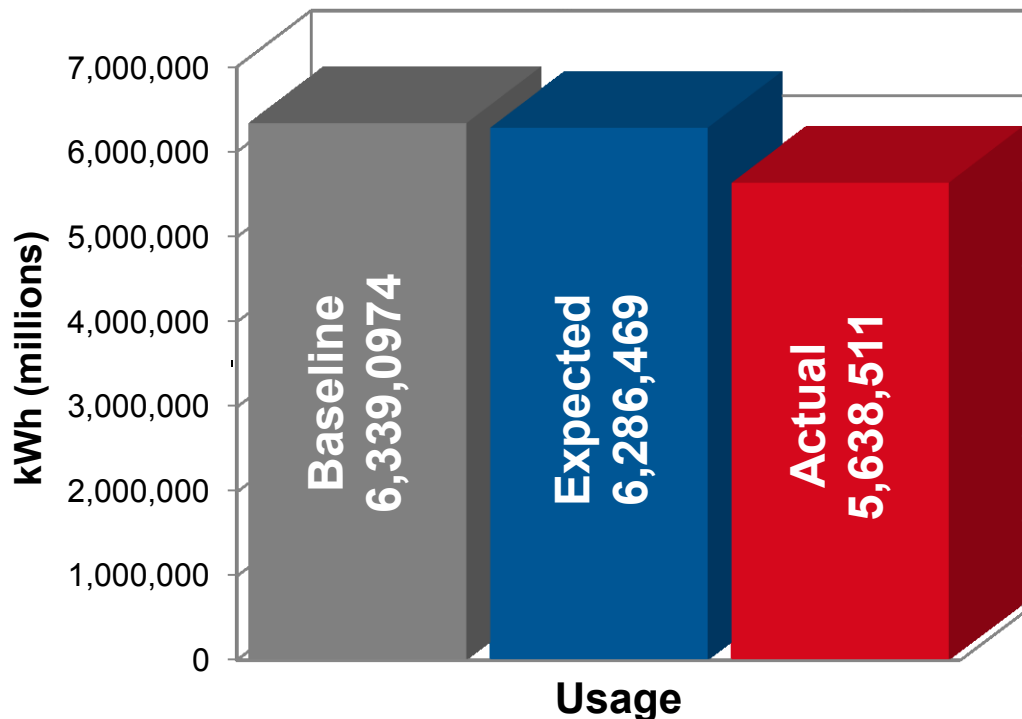
February 2016 – January 2017

**Average Unit Cost Increased**

**4.1%**

**Total Avoided Use**

**647,958 kWh**





# Water-Sewer Comparison

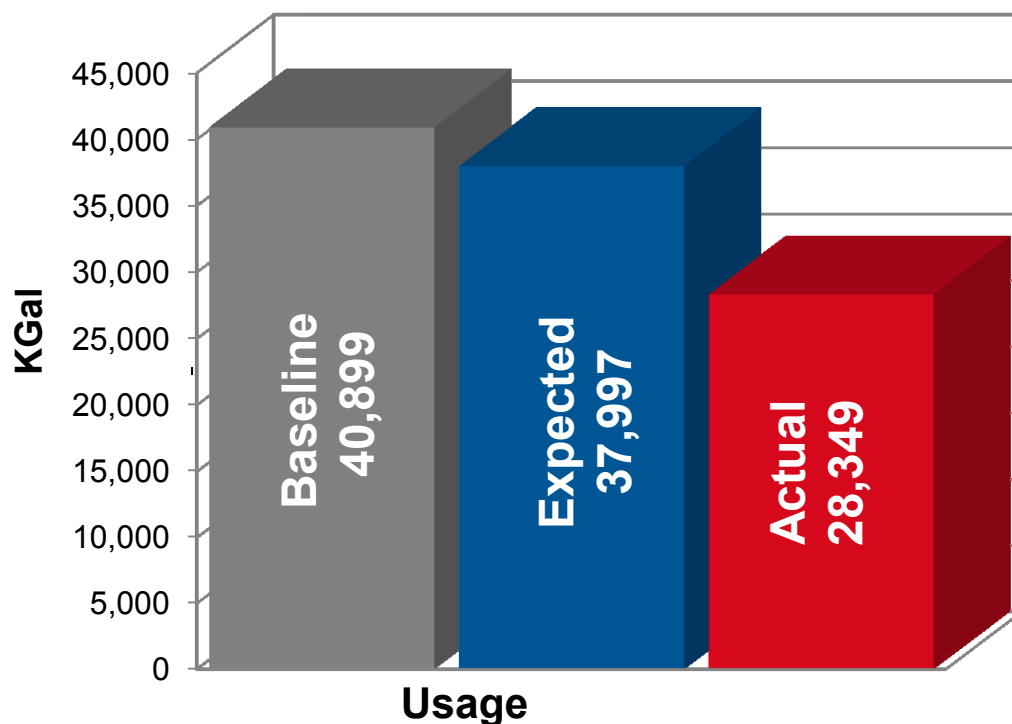
February 2016 – January 2017

**Average Unit Cost Increased**

**4.1%**

**Total Avoided Use**

**9,648 CCF**



# Irrigation Comparison

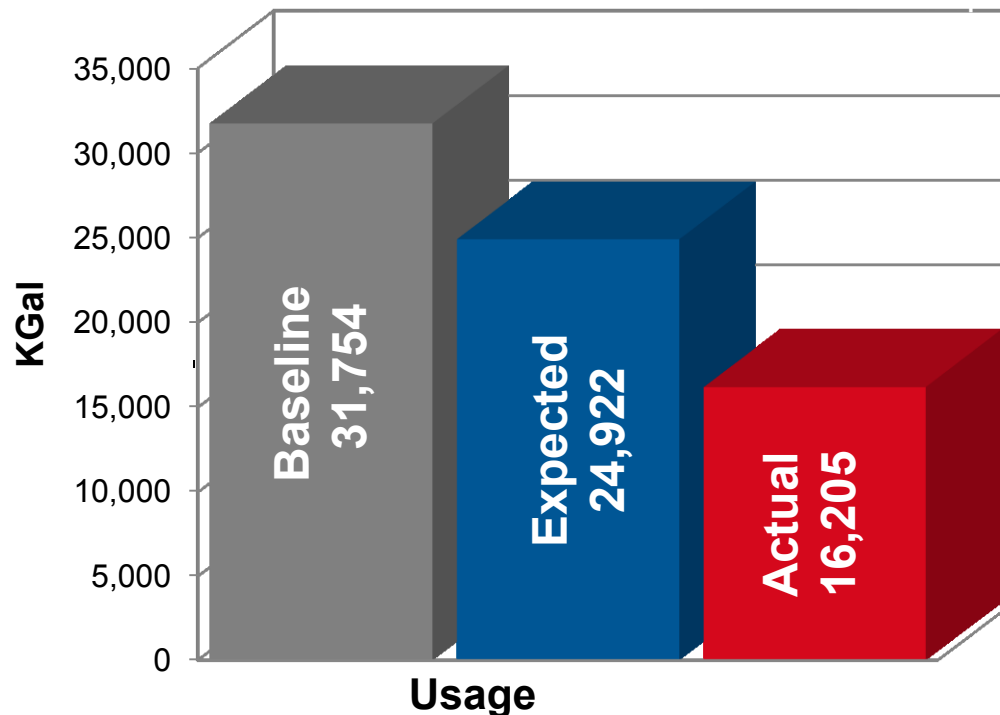
February 2016 – January 2017

**Average Unit Cost Increased**

**20.2%**

**Total Avoided Use**

**8,717 CCF**



# Natural Gas Comparison

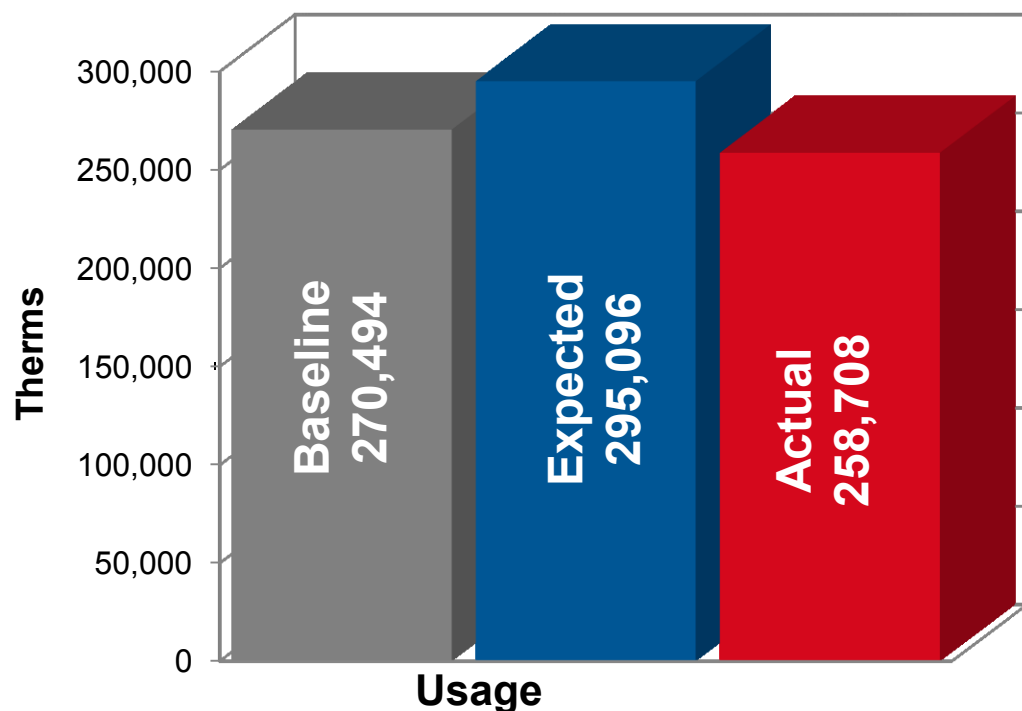
February 2016 – January 2017

**Average Unit Cost Increased**

**8.5%**

**Total Avoided Use**

**36,388 CCF**



# Specific Accomplishments



- Initiated additional energy-saving culture changes across district
- Daily changes in lighting and computer control emphasized and audited by Energy Specialist
- Facilitated \$5298 PG&E rebate for energy efficient boilers installed at Encinal pool
- Holiday and Summer shutdown of facilities communicated with staff & verified per district guidelines

# Alameda Unified School District

**Percentage of Energy Savings To Date:**

**16.8%**

**5,850,280 kBTU of energy**

**FEBRUARY 2016 – JANUARY 2017**

# Environmental Benefits

**We have saved over *5,850,280 kBTU of energy*:**

- 647,958 kilowatt hours (kWh) of Electricity
- 36,388 hundreds of cubic feet (CCF) of Natural Gas

**These savings equate to the reduction of greenhouse gas emissions:**

- Preventing 313 Metric Tons of CO<sub>2</sub>
- Removing 65 automobiles for an entire year
- 8,029 tree seedlings grown for 10 years (CO<sub>2</sub> sequestered over that period)

# Teamwork

***The success of the program depends on everyone!***

## **Special thanks go to:**

- School Board for proactively implementing our program
- Community for supporting our energy program
- Maintenance Staff for executing changes in the heating and cooling systems
- Custodians for setting back each night
- Teachers for reducing energy waste in their classrooms
- Principals and Staff for coordinating efforts in their schools

# The Future of Our Energy Program

- Prepare for Summer Shutdown to achieve greater savings
- Continue to standardize procedures to resolve comfort issues — comfortable buildings improve student learning, help staff productivity, boost personnel morale
- Continue developing an “energy conservation culture”



# Future ENERGY STAR® recognition

ENERGY STAR certification at every school

- Validation of our energy program at the national level
- Demonstrates our good stewardship of our environment
- Committed to high standards in energy conservation

