



# **Energy Conservation Program Board Update**

Norwin School District  
April 2011 – November 2011

Crit Baker  
Energy Specialist

# PRIMARY GOALS

- **Maintain Comfort & Safety**
  - ⊙ Audit buildings and monitor use and comfort
  - ⊙ Coordinate run times with facility use
- **Eliminate Energy Waste**
  - ⊙ Change energy use patterns and habits
  - ⊙ Track & analyze consumption
- **Save Dollars**
  - ⊙ Audit utility bills & meters for errors, overcharges
  - ⊙ Investigate rebate & grant programs
  - ⊙ Create a “climate of conservation”

# MEASUREMENT + VERIFICATION

- **Measurement and Verification (M&V)**
  - ⊙ Terminology used to describe measuring energy savings and verifying avoided costs
- **We keep score!!**
  - ⊙ All data, adjustments and reports produced by EnergyCAP® are available for review by district staff
- **EnergyCAP adheres to International Guidelines**
  - ⊙ International Performance Measurement and Verification Protocol (IPMVP)
  - ⊙ EnergyCAP is in full compliance with this guideline
  - ⊙ Third party software
    - EnergyCAP, Inc., State College, PA

# MEASUREMENT + VERIFICATION

- **IPMVP prescribes adjustments be made for:**
  - ⦿ Changes in weather, building square footage, portable buildings, equipment, billing cycle differences, etc.
- **IPMVP prescribes that energy saved be valued:**
  - ⦿ Changes in use, meter by meter
  - ⦿ Based on current energy prices

# CHANGES IMPACTING ENERGY COSTS/USE

- **Changes in Energy Unit Costs**

- ⊙ Electric Decreased: .7%
- ⊙ Natural Gas Increased: 7.2%

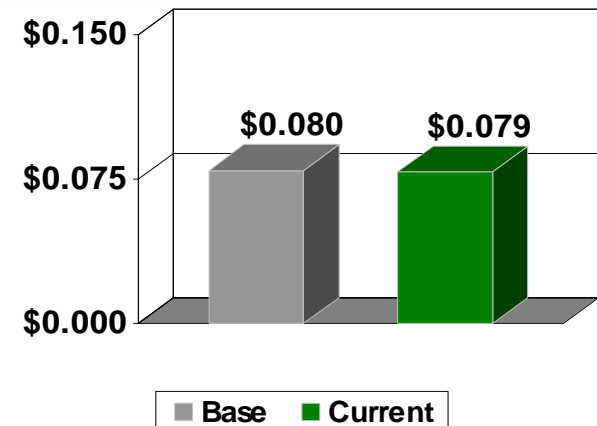
- **Changes in Weather/Temperatures**

- ⊙ Heating Season: 9.2% milder
- ⊙ Cooling Season: 2.9% milder

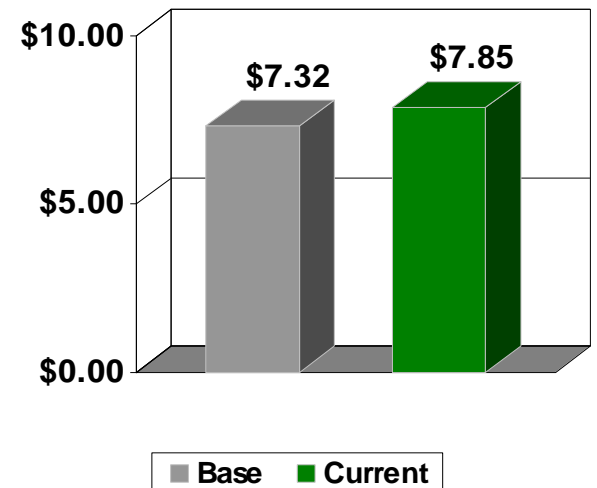
- **Changes in Buildings / Mechanical**

- ⊙ No planned changes to the School District's buildings or to the HVAC systems

**Electric Unit Cost/kWh**



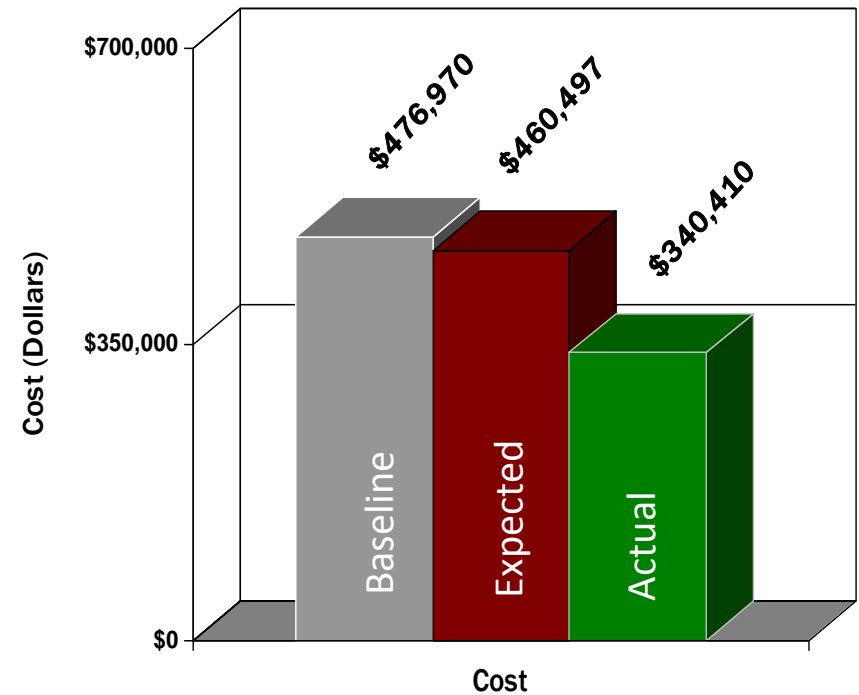
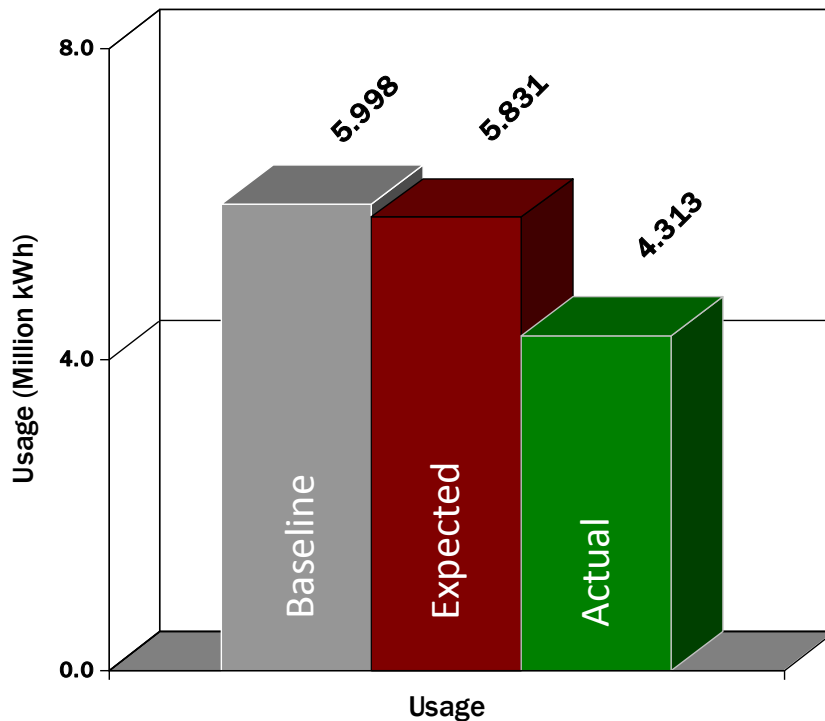
**Gas Unit Cost/Therm**



# ELECTRIC COMPARISON

Apr11-Nov11

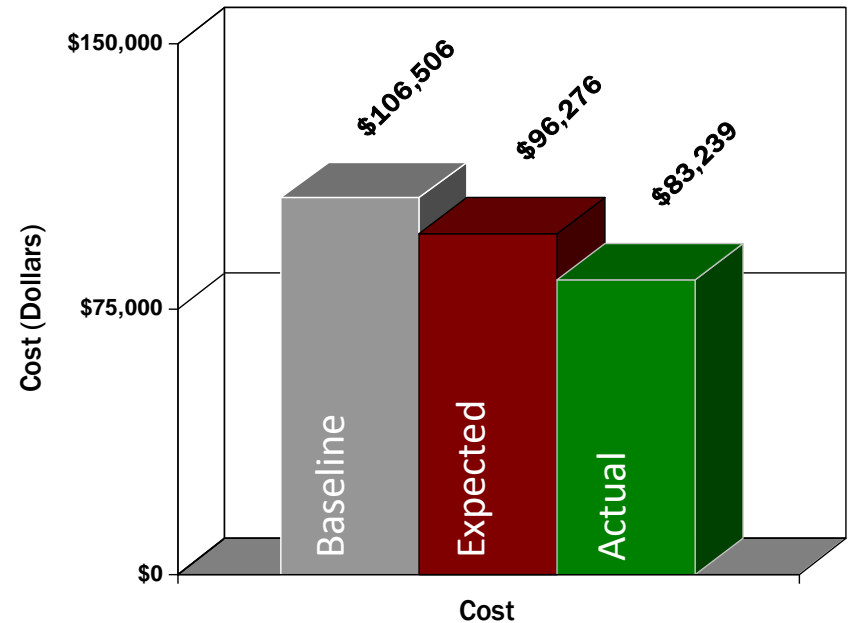
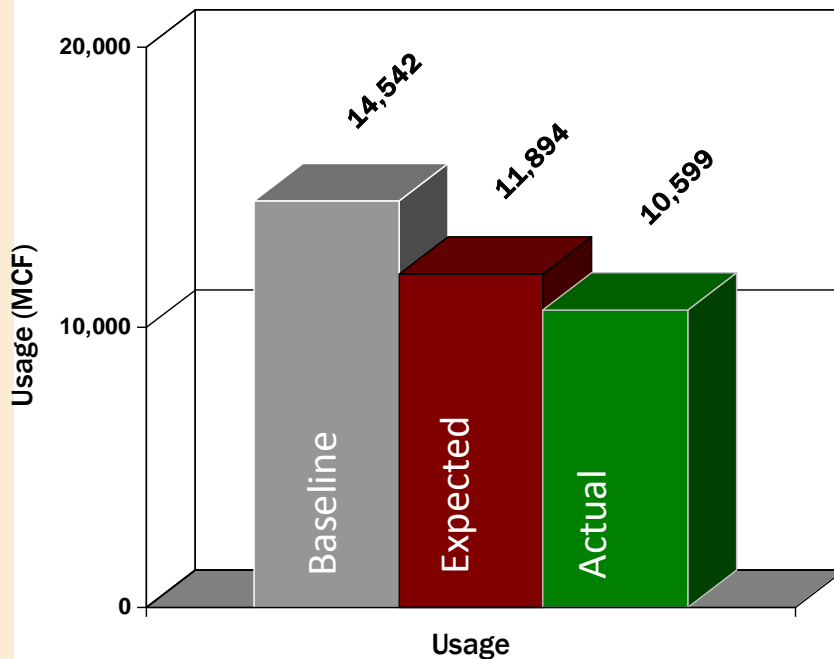
- ❖ Average Unit Cost Decreased .7%
- ❖ Total Avoided Use 1,684,879 kWh
- ❖ Expected minus Actual \$120,087



# NATURAL GAS COMPARISON

Apr11-Nov11

- ❖ Average Unit Cost Increased: 7.2%
- ❖ Total Avoided Use: 3,943 MCF
- ❖ Expected minus Actual: \$13,037



# SAVINGS

April 2011 – November 2011

**\$133,124**

**23.9%**

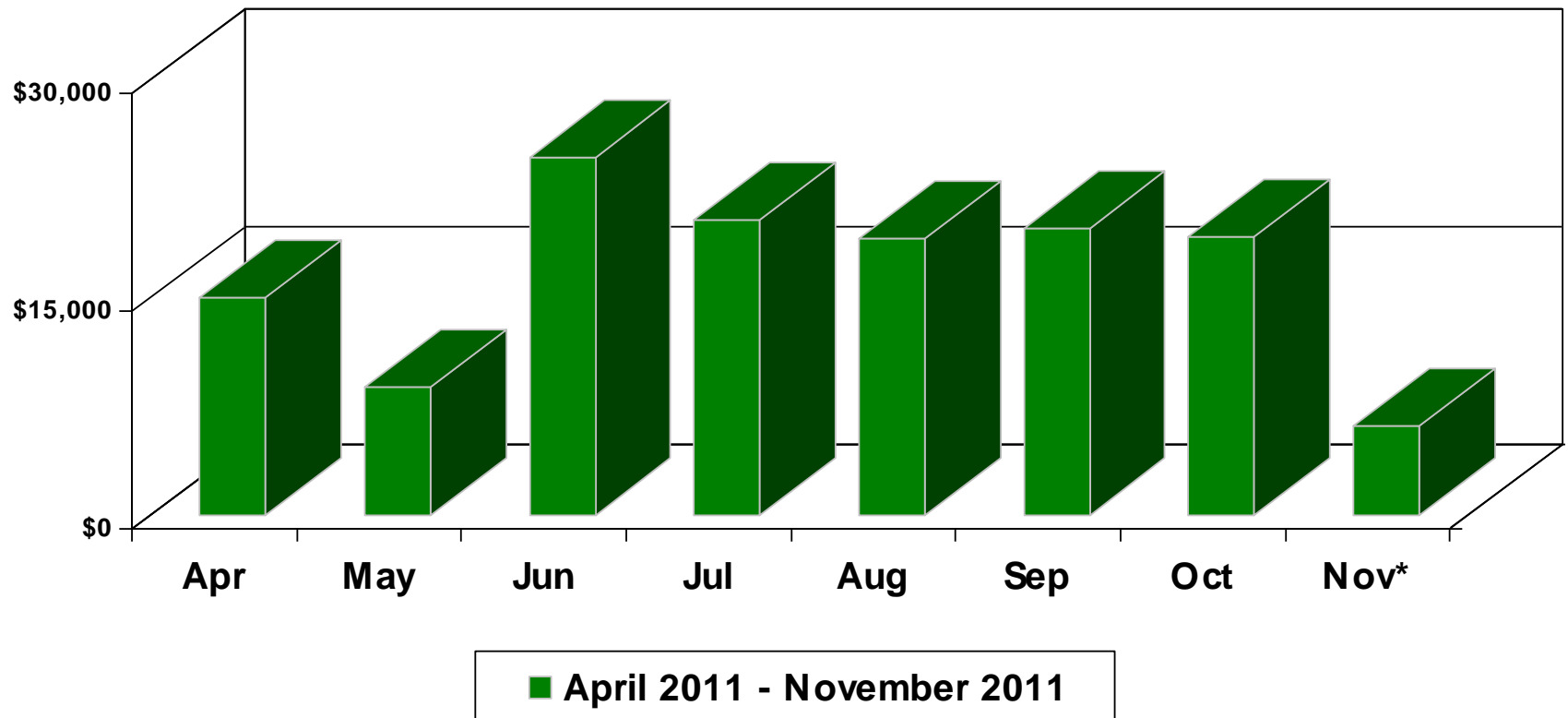
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Fast Track Period:

Dec10 – Mar11	\$ 18,156
Total Savings including Fast Track	\$151,280



# SAVINGS BY MONTH



\* 8 Natural Gas bills not received for Nov11

# ENERGY STAR®



- The district is committed to high standards in energy conservation
- Demonstrates good stewardship of the environment
- Validation of our energy program at the national level
- Targeting additional ENERGY STAR® recognition

# ENVIRONMENTAL BENEFITS

APR11-NOV11

- **Energy use creates greenhouse gas emissions:**
  - ⊙ The EPA reports that the following levels of Greenhouse Gas emissions are produced in our region.
    - 1.552 pounds of carbon dioxide per kWh of Electricity
    - 120.37 pounds of carbon dioxide per MCF of Natural Gas
- **The district has saved:**
  - ⊙ **1,684,879 kWh of Electricity**
  - ⊙ **3,943 MCF of Natural Gas**
- **These savings equate to:**
  - ⊙ Preventing 1,139 Metric Tons of carbon dioxide emissions, or
  - ⊙ Removing 204 automobiles from highways for an entire year, or
  - ⊙ Planting and growing 29,132 tree seedlings for 10 years

# IN CLOSING

- **Special Thanks to:**
  - ⊙ Maintenance Staff and Custodians
  - ⊙ Ed Miller – HVAC Technician
  - ⊙ Teaching Staff
  - ⊙ Principals and other Administrative Staff
  - ⊙ Board of Education
- **Opportunities:**
  - ⊙ Shoulder months (April & May)
  - ⊙ Remainder of the Heating Season
  - ⊙ Breaks/Extended Shutdowns
    - Spring Break