

# Energy Savings for Local Governments

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Achieving Energy Savings Seminar  
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August 1, 2007



# SEDA-COG'S Energy Resource Center

## 1. Energy Demand Reduction

1. Schools
2. Homes
3. Local Governments
4. Businesses



## 2. Renewable Energy Markets for Existing and New Businesses

## 3. “Homegrow” efficient and renewable energy technology and expertise

# Energy Savings Initiatives

■ Utility Bill Analysis



■ LED Traffic Light Conversion

# Utility Bill Analysis

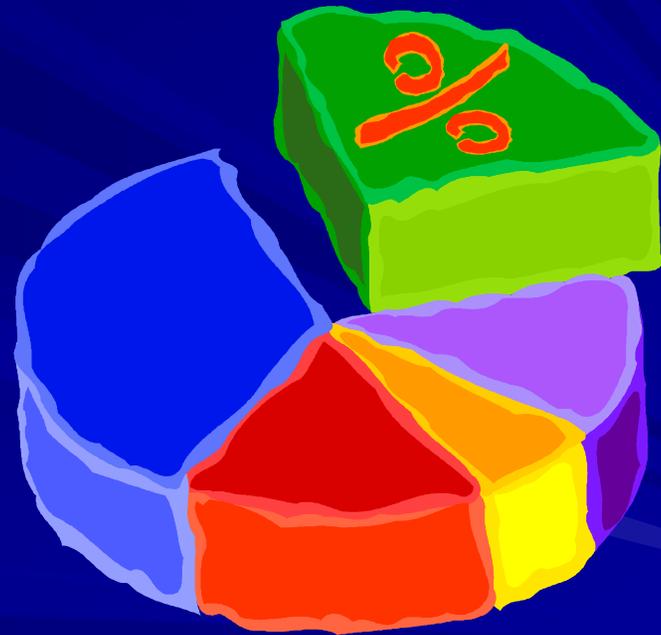


# Why Utility Bill Analysis?

- Difficult to track energy use and costs
  - Utility rates are negotiated between the utility and the PUC, not the customer
  - Most municipalities receive an electricity and heating bill for *each meter*
- Microsoft's Excel spreadsheet is a good info tool to track energy use

# How Are You Using Energy?

- What gets measured gets managed
- Energy is now a dear resource



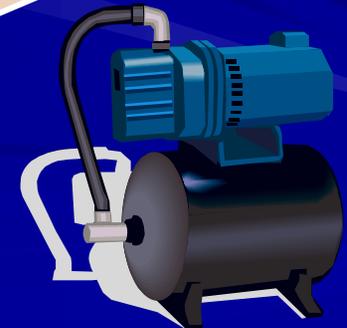
# Dual Evaluation

## 1. Building Envelope



## 2. Operations

- Lights
- Motors
- Pumps
- Equipment
- HVAC



# Where Do You Start?

## ■ Microsoft Excel Spreadsheet

- Record monthly utility bills for all meters
- Charts provide visual tracking of energy use
- Good energy management planning tool

## ■ Energy Assessment

- Efficiency of Equipment
- Proper Insulation

# What Do You Track?

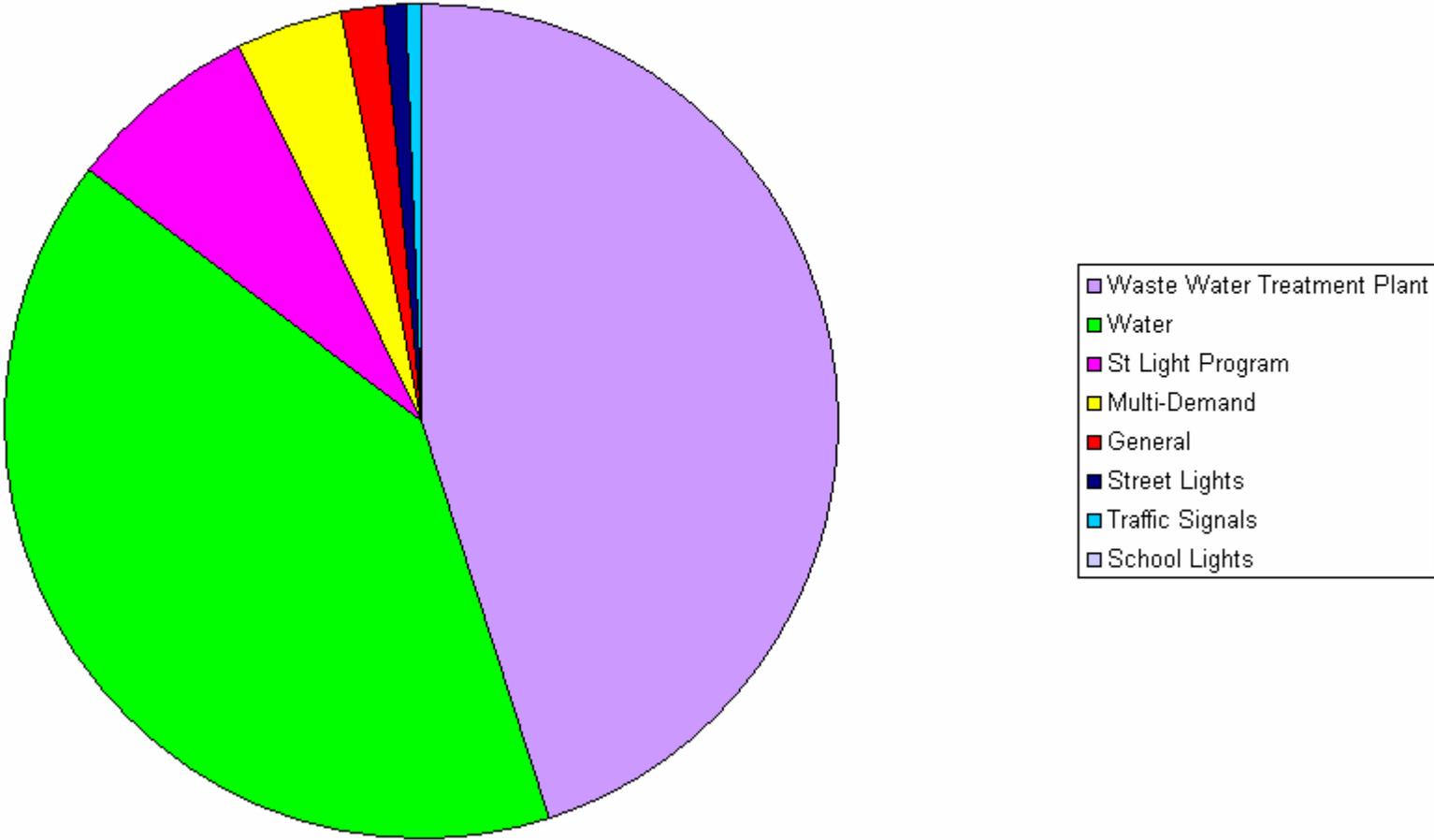
- Consumption (Kw)
- Demand
- Cost



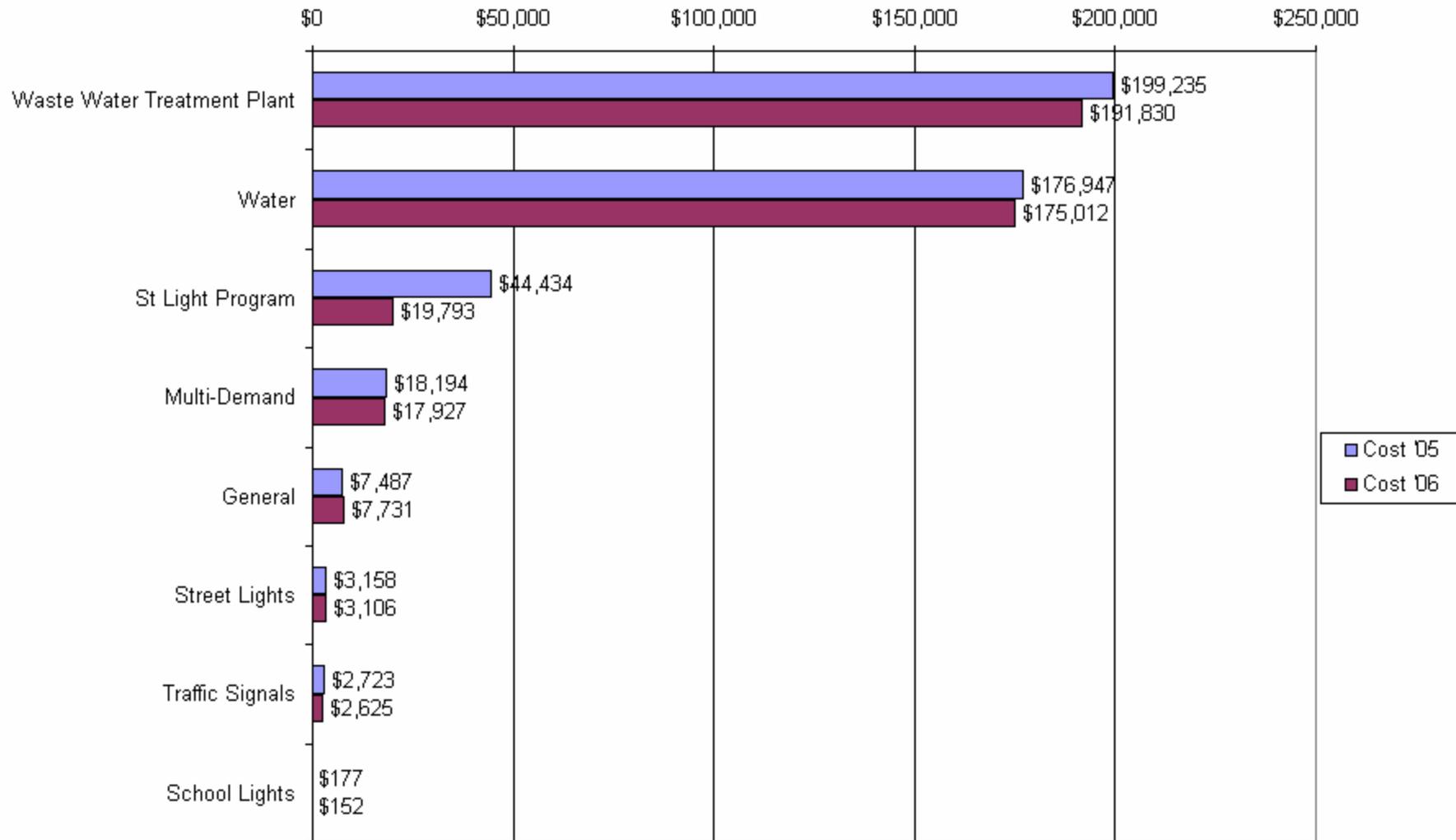
# Borough of Bellefonte

## Utility Bill Analysis and Energy Assessment

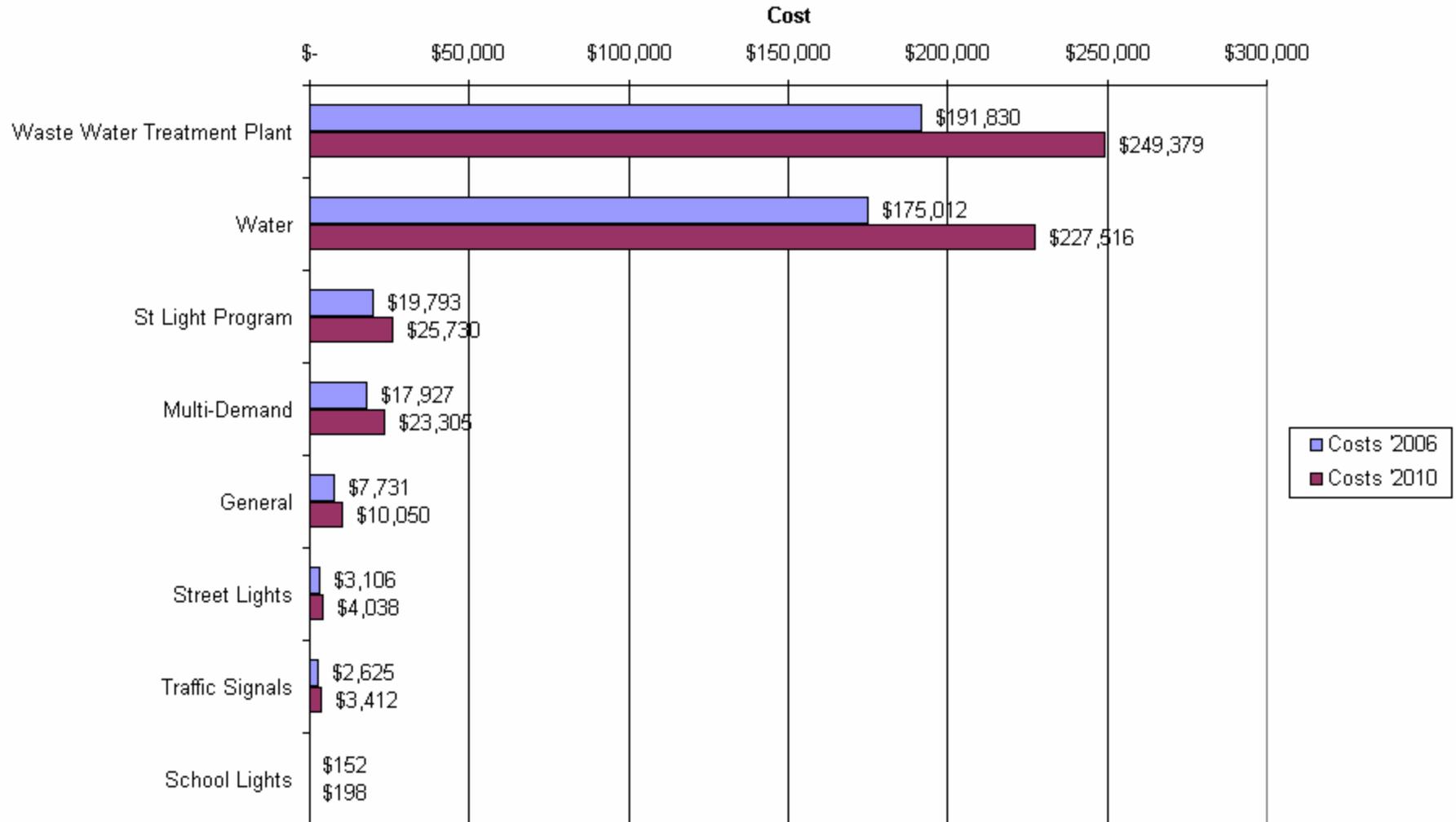
### Bellefonte Borough Total Costs for Services 2005 and 2006



### Total Annual Electricity Costs Comparison for Each Major Use 2005 and 2006



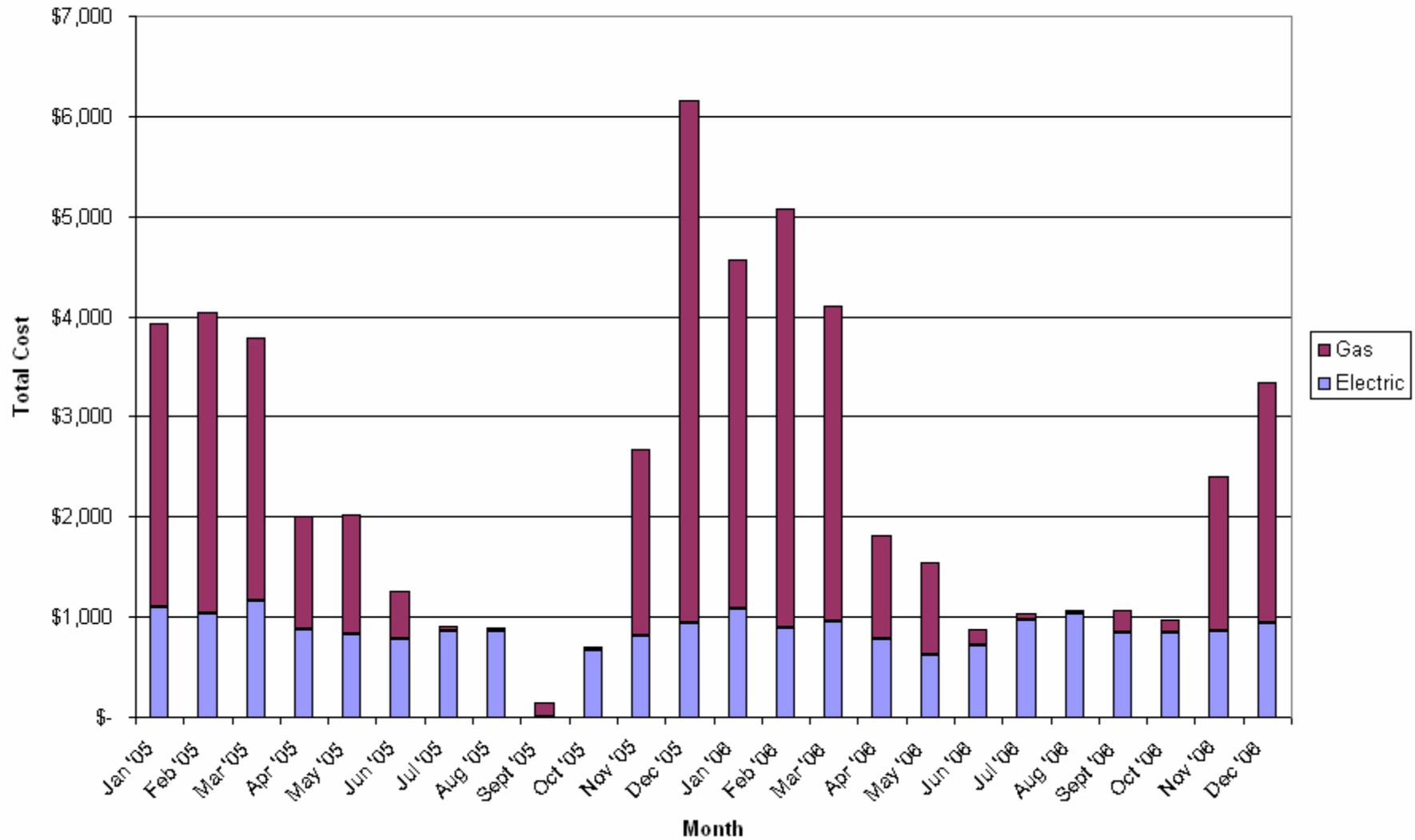
**Comparison of 2006 Electricity Costs with Projected 30%  
Increase in 2010 Costs Comparison  
2006 and 2010**



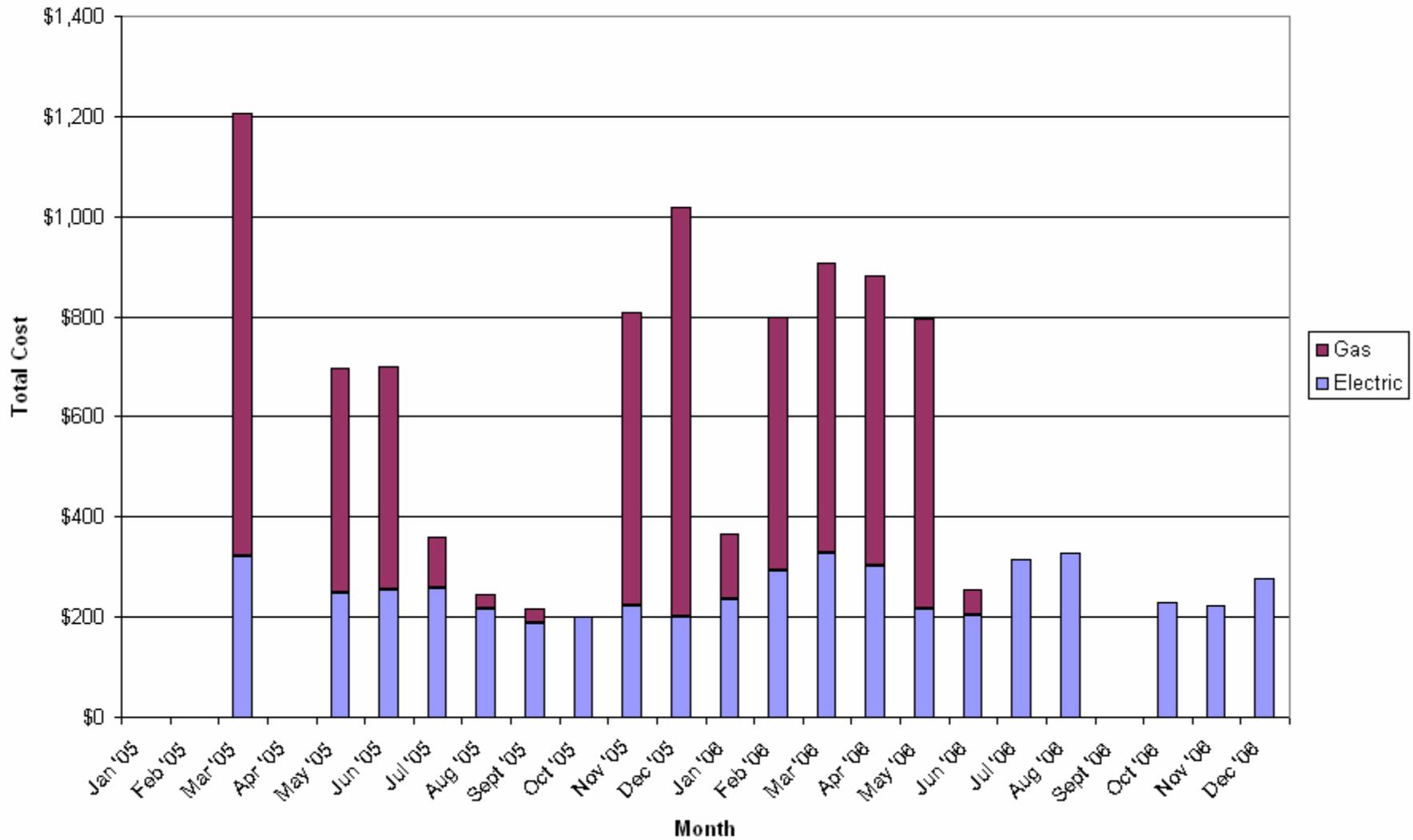
# Electricity Cost Scenarios

|                 |           |
|-----------------|-----------|
| ■ 2006 Costs    | \$418,000 |
| ■ 30% Increase  | \$544,000 |
| ■ 50% Increase  | \$628,000 |
| ■ 100% Increase | \$836,000 |

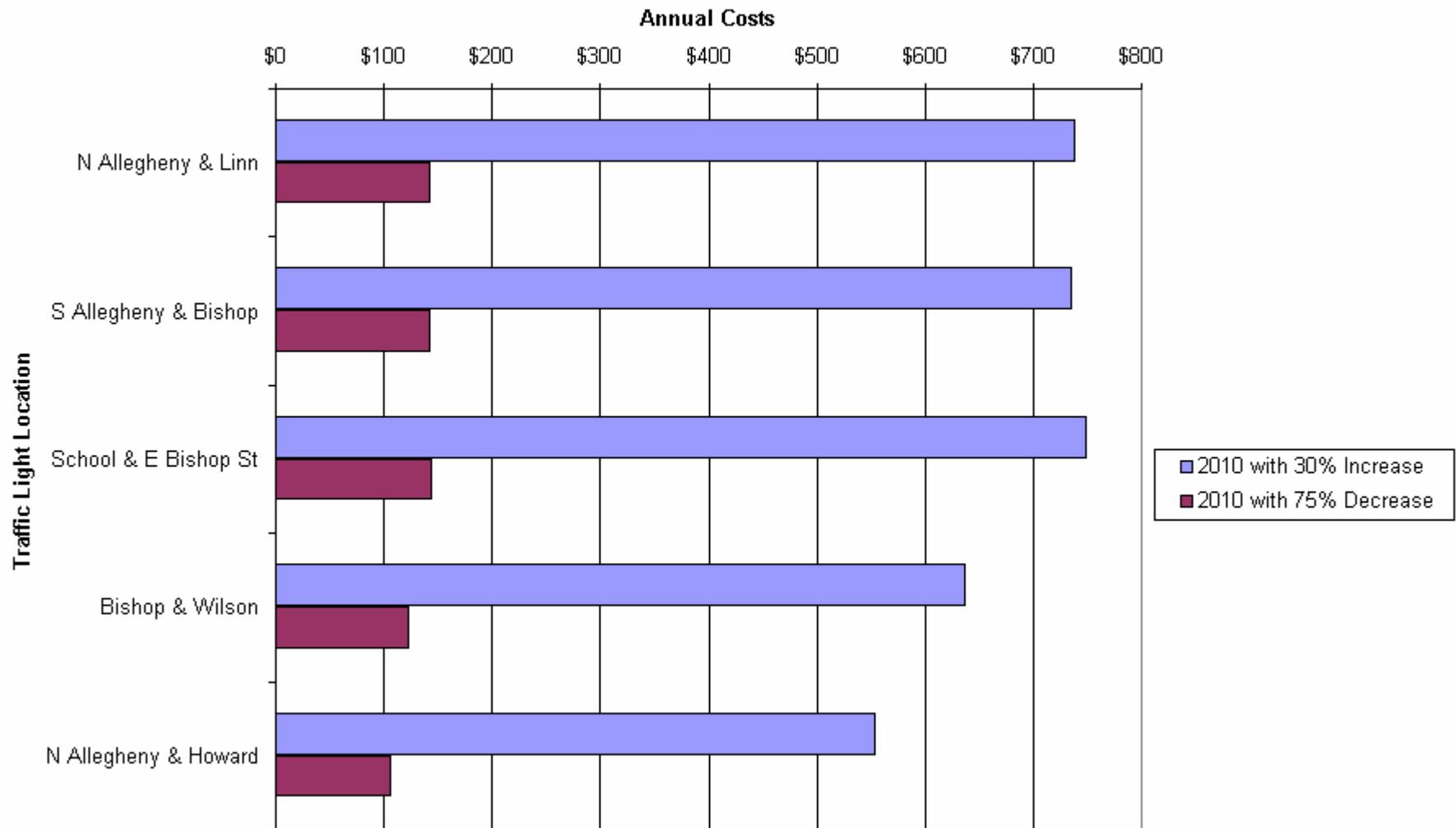
## BWO Building and Garages Gas and Electric Comparison



## Logan Fire House Gas and Electric Comparison



## Traffic Light 2010 Projected Costs Compared to LED Traffic Light 2010 Costs



In the absence of December 2006 cost information, December 2005 costs were used.

Chart does not include cost of those traffic signals that are on multi-use meters.

# Recommendations to Bellefonte

- Engage your employees in energy reduction
- Work with your engineer to convert to variable speed motors and pumps for wastewater and water systems
- Weatherize your buildings to reduce energy costs
- Replace inefficient heaters with efficient heaters
- Convert to LED traffic lights
- Require your fire department to turn down the thermostat when they open their doors
- Harness your spring for hydropower

# Recommended Actions

1. Become more informed
2. Evaluate current energy usage
  - self-analyze
  - energy professional
3. Reduce your energy demand
4. Shave “peak costs” via renewable energy technology
5. Develop energy management plans



# Energy Management Plans

- Track how you are using energy
- Identify Low Hanging Fruit
- Use savings from low hanging fruit to finance greater reductions that have higher capital costs



# Technical Assistance

## ■ Self-Help

- Utility Bill Analysis
- Portfolio Manager
- Electricity Utilities
- EERE
- Today's

## ■ Consulting Engineers

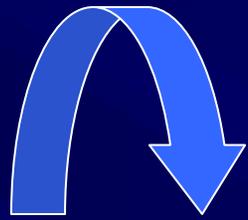
## ■ Architects

## ■ Energy Saving Companies

## ■ Non-profit/Agency:

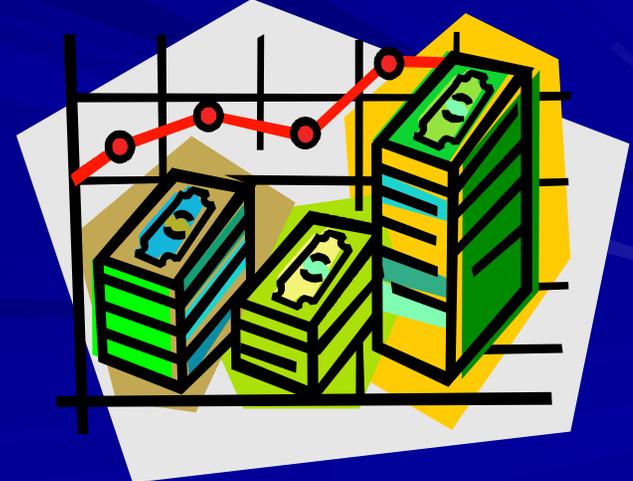
- SEDA-COG
- DEP





# Start NOW

- SEDA-COG is offering 4 more free utility bill analyses this year
- Call us at 570-524-4491



# LED Traffic Light Conversion



# Incandescent Traffic Signals

- Current electricity costs per intersection

\$1,000

- 2010 electricity costs per intersection

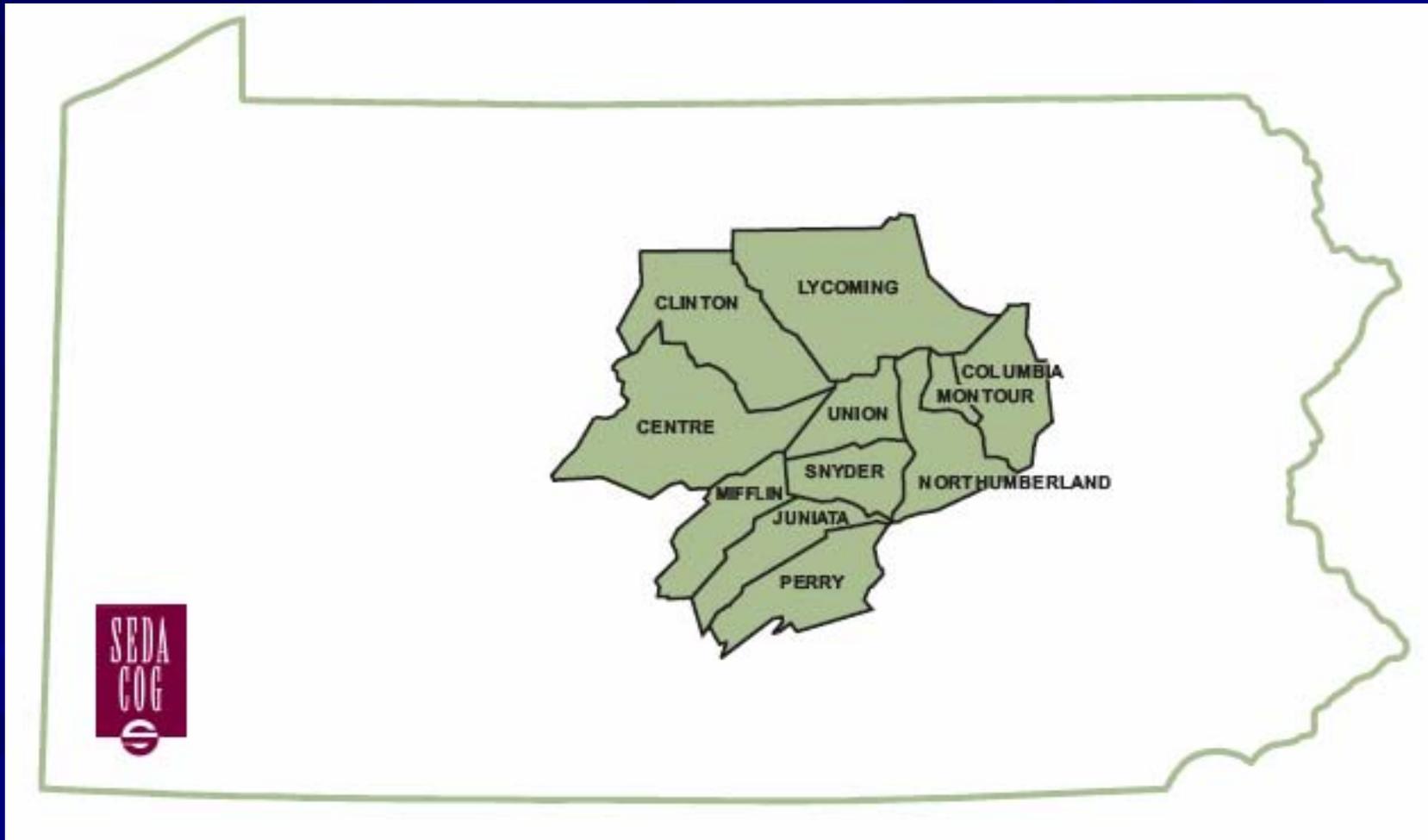
\$1,300 to \$2,000

- High maintenance costs

# LED Traffic Signals

- Highly efficient
- Use 90% *LESS* energy than incandescent
- Last 5 to 7 years
- Capital costs = \$3,000/intersection
- Payback = 3 years

# Service Area



# LED Conversion Project

- SEDA-COG and PennDOT teamed
- Assist 65 communities convert 225 intersections to LED
- One equipment bulk purchase
- Training and assistance to procure qualified local lighting installation contractor
- Completed before rates increase