

City of Burlington

Sustainability



Eric Hilton, PE
Sustainability & Special Projects
Sustainability Update, January 2011

Sustainability Update

Outline



- What is Sustainability?
- Status of EECBG Grant
- Recycling Update
- Fleet Management
- Summary

Sustainability

- What it is NOT:
 - Overzealous effort to save the planet at the expense of the inhabitants
 - “Going Green”
 - Austerity and restrictions

Sustainability

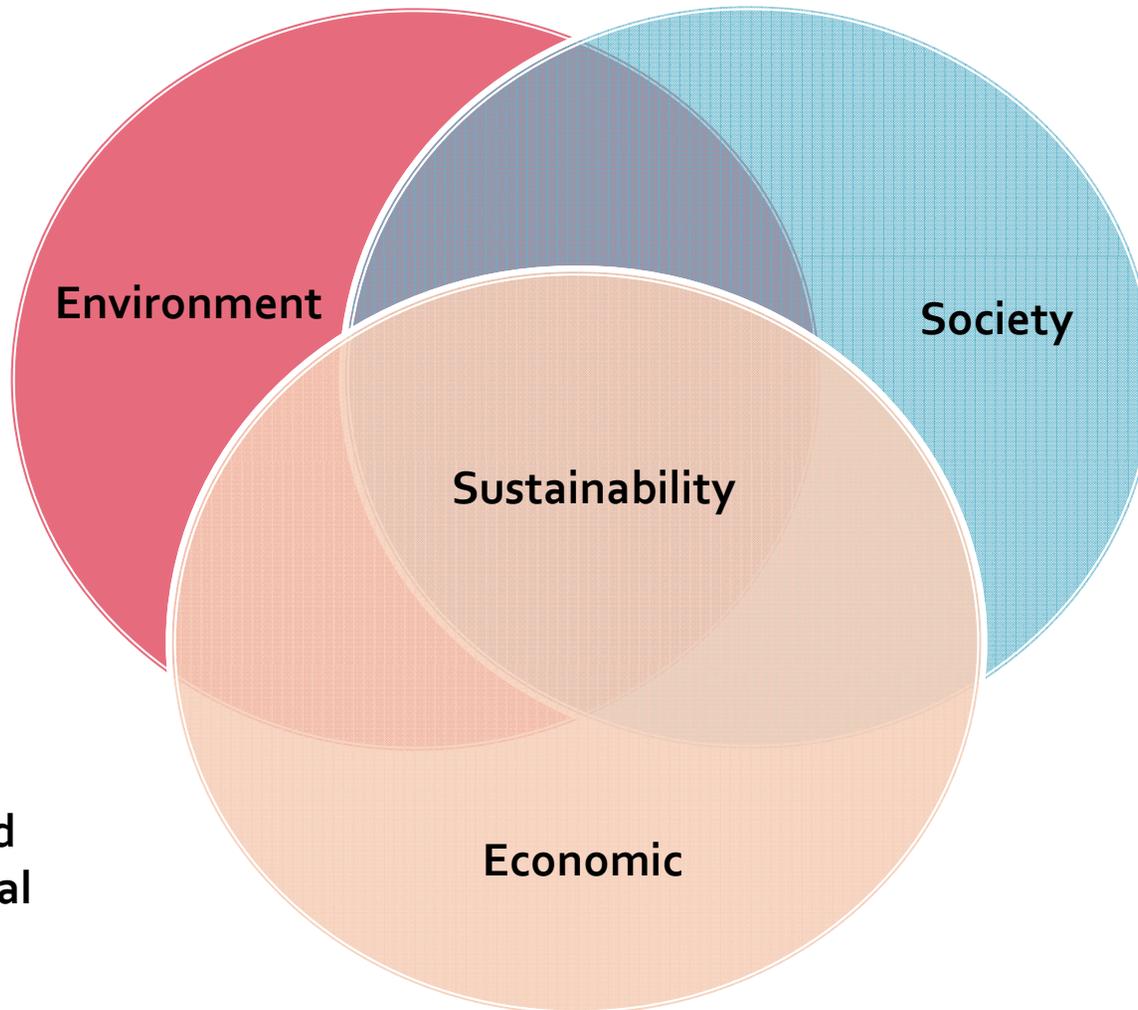
- What it can be defined as:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

"Being as green as we can with the green that we have"
-Bob Dixson, Mayor Greensburg Kansas



Sustainability



Balancing
Societal,
Economic and
Environmental
Needs

Energy Efficiency & Conservation Block Grant

- Direct allocation of ARRA funds from the Dept. of Energy (\$223,900)
- EECBG Grant covered several items
 - Energy Plan
 - Energy Baseline
 - Projects

Energy Plan

- Developed with Energy Consultant David Mahoney
- Summary of Plan:
 - Employ an engineer focused on Sustainability
 - Winston-Salem, Greensboro and Durham have a comparable position
 - Perform energy audits of key buildings
 - Develop energy tracking tools and metrics
 - Upgrade lighting to more efficient selections
 - Replace Municipal Building boiler

Energy Conservation Goal

Conservation goal of **5%** cost avoidance for FY
2010

What is a 5% reduction?

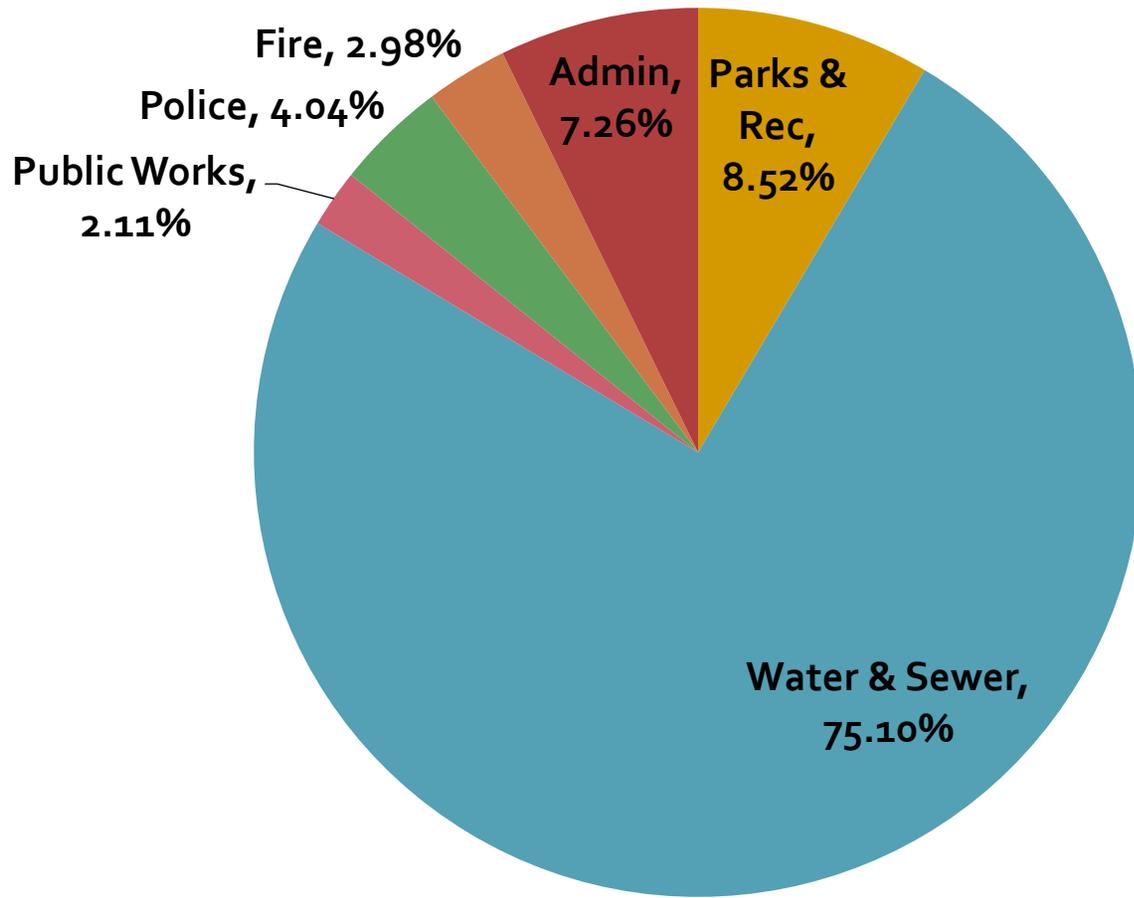
2,050,000 kw-hrs (233 kw operating year round)

Ten 100 watt light bulbs burning for 1 hour is one kilowatt-hour

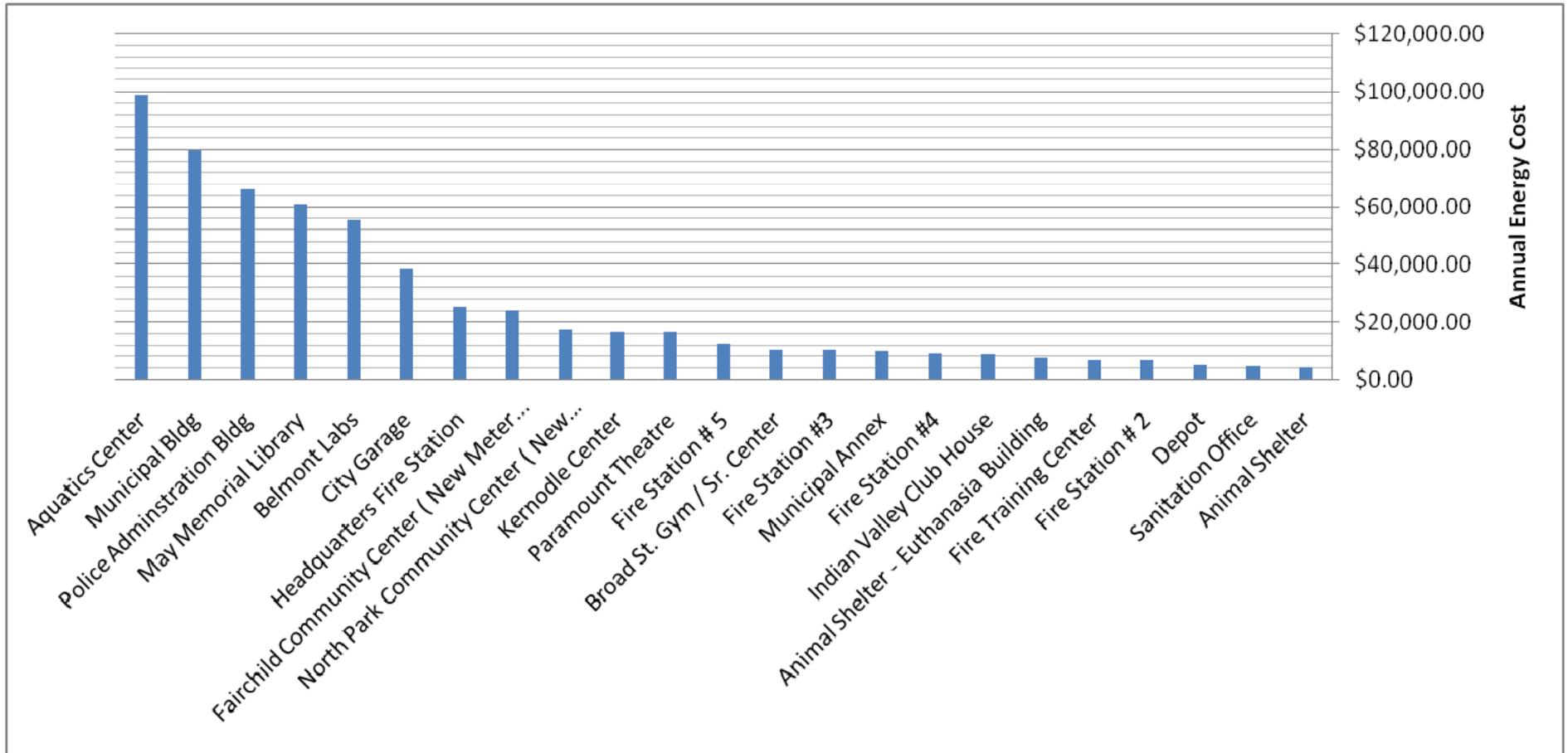


Equivalent of \$145,000 at our current average
billing rate

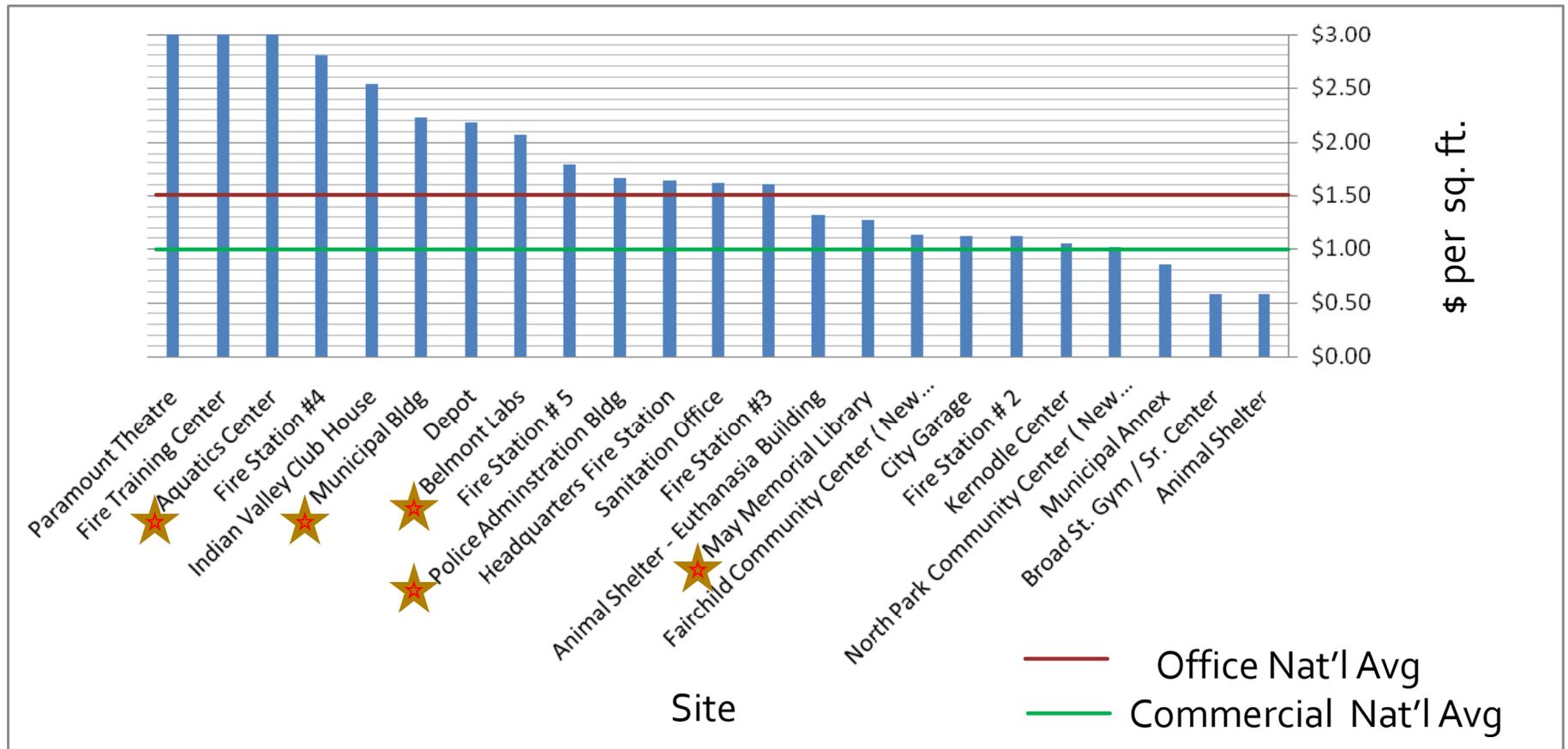
Energy Consumption by Department



Annual Energy \$ by Building



Energy Performance by Building



Energy Plan Implementation Status

- Data collection and metrics are almost complete
- Energy Team – meets monthly, individuals from each department
- HVAC performance being evaluated for Municipal Building, Belmont Labs
 - \$126,900 total annual energy bill
- Aquatic Center options being developed
 - \$79,000 total annual energy bill

Lighting Upgrade

- Retrofits for:

City Hall

Belmont Labs

Public Works

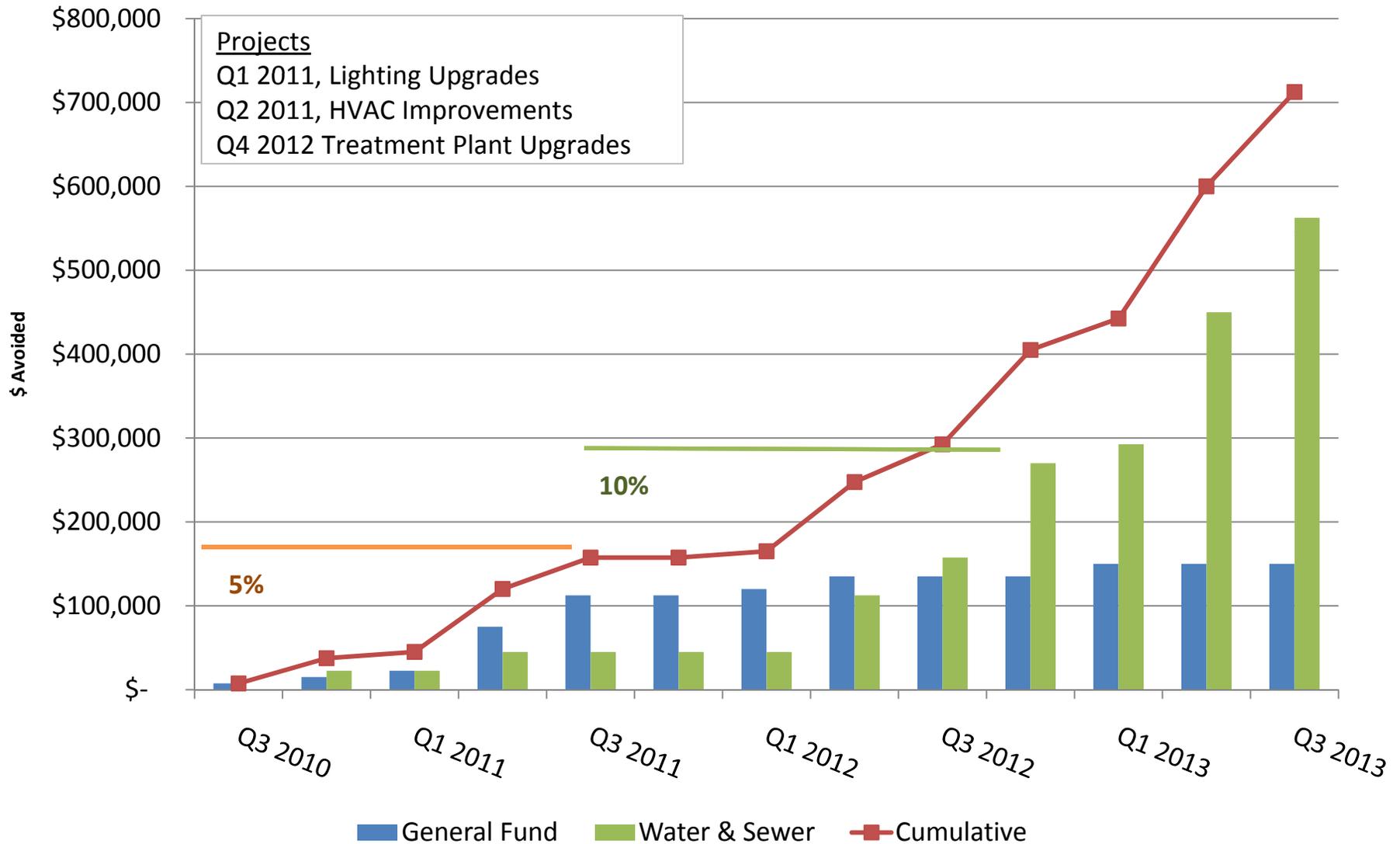
City Garage

Police HQ

Fire HQ

- \$105,000 project cost
- \$25,000 in Duke Energy Rebates
- Begin work on Wednesday January 5, complete late February
- Increase in light output and lighting effectiveness
- 50% decrease in energy consumption, will save around 635,000 kw-hr (~\$45,000) of energy, one-third of our target
- Eliminates lighting maintenance for 4 years in these buildings

Projected Energy Savings Potential



Comparison of Building Age & Performance

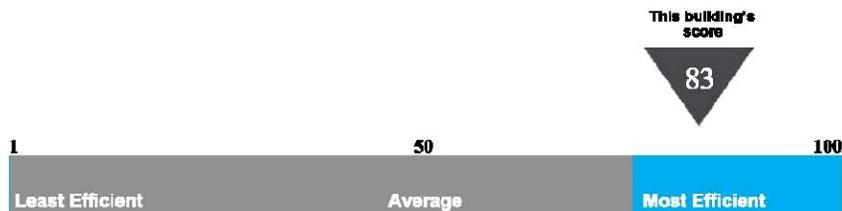
Statement of Energy Performance

2010

kemodle center
1535 s. mebane st.
burlington, NC 28215

Portfolio Manager Building ID: 2523125

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1-100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 112 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending October 2010

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

Statement of Energy Performance

2010

Municipal Building
425 S. Lexington Ave.
Burlington, NC 27215

Portfolio Manager Building ID: 2521197

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1-100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 369 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending September 2010

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

Solid Waste & Recycling

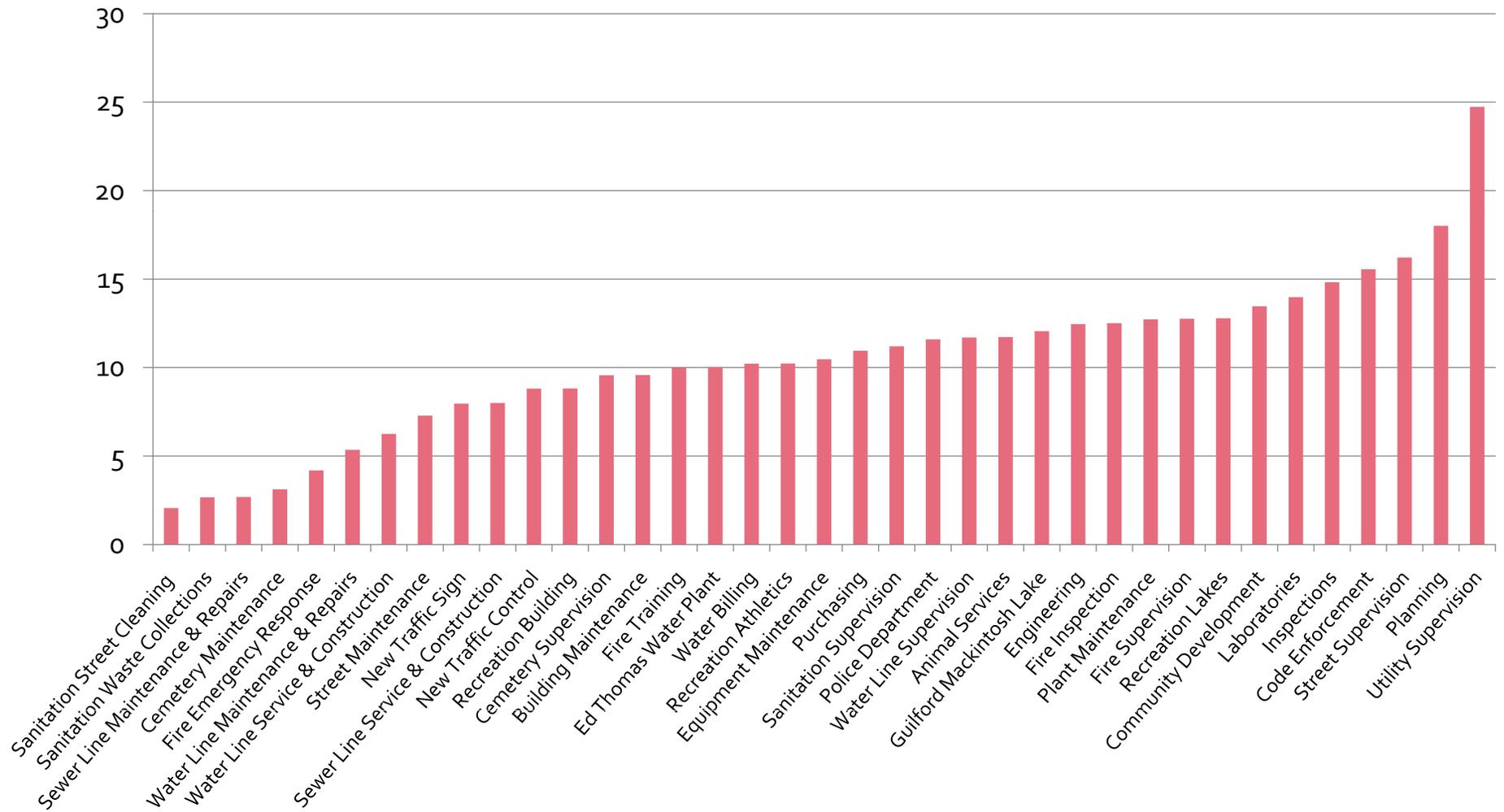
- Updating solid waste ordinance for current landfill bans
- Evaluating a pilot program to self-perform recycling collection using 96 gallon roll-out carts
- Implementing recycling program at city buildings and evaluating a program for parks
- Started rechargeable battery recycling program for Fire and Police



Fleet Management

- FY 2009-2010 Background Data – Highway travel only
 - 2,414,492 miles driven
 - 293,145 gallons of fuel consumed
 - \$589,221 spent on City fuel
 - Average price of \$2.01 per gallon
 - City-wide average fuel economy is **8.2** mpg
 - High of 24.7 mpg for Utilities Supervision
 - Low of 2.0 mpg for Sanitation trucks

Burlington City MPG



Fleet Options

- Cities in NC have already moved to improve fleet efficiency
 - Asheville, Winston-Salem, Durham
- Evaluate options as fleet is replaced
 - Determine true needs and maximize economy
 - Hybrid options
 - Compressed Natural Gas



Summary

- Our city is positioned to show great progress in sustainability
- Costs can be reduced through these efforts
- Long term health of the city is improved
- We can show well with cities much larger than ourselves