

Proving Your Energy Saving Program's Worth

**Karen Messmer
and
Karen Janowitz**

Energy Facilities Connections Conference

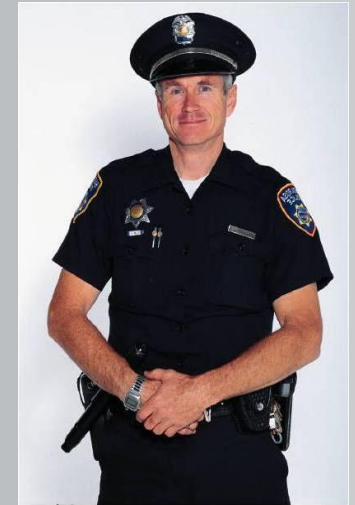
May 2011

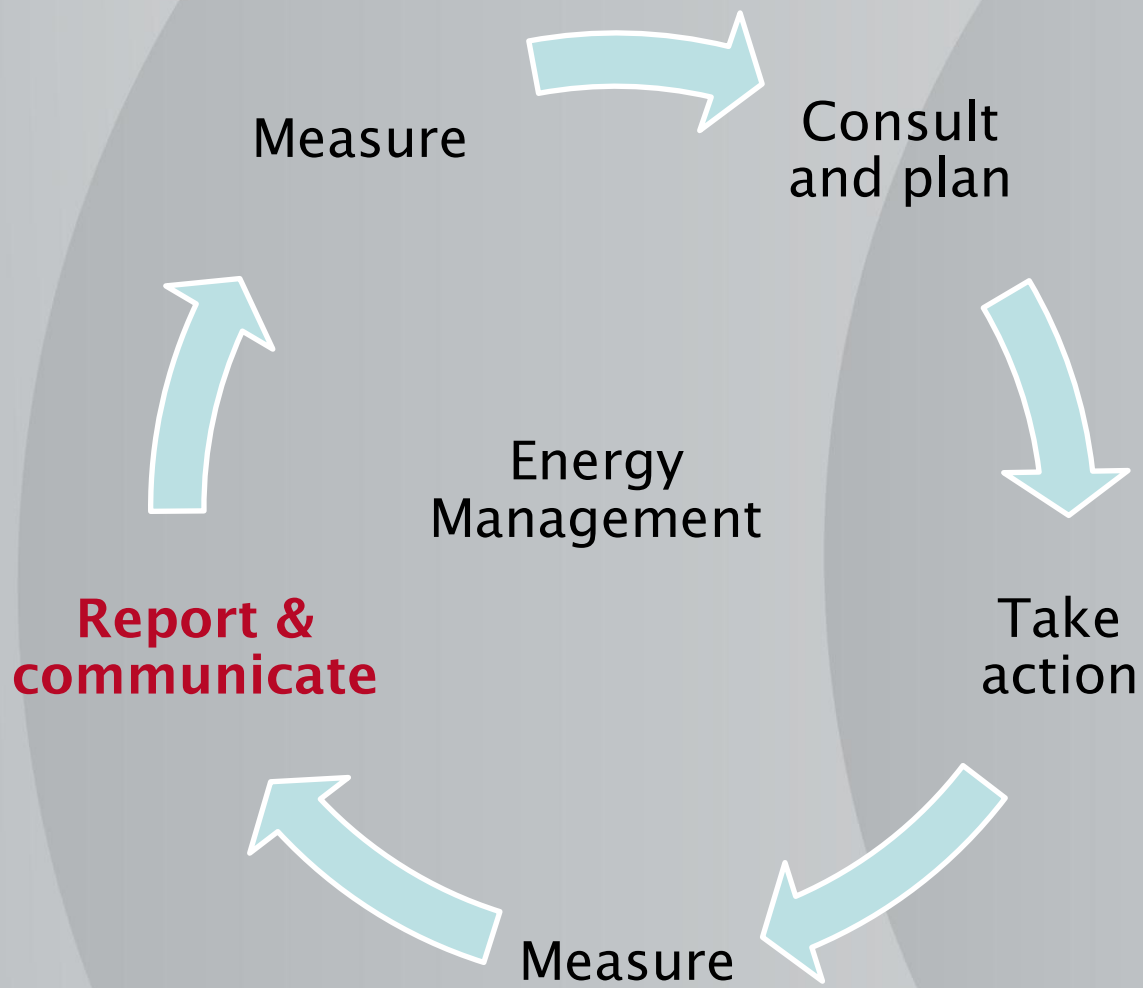


Energy Management Saves Money

- Reduction in energy use
- Reduced peak demand charges
- Investments pay off over time
- Non-energy benefits also accrue

Use the money for important services





Measure Your Use and Savings

- Track energy use
- Track energy saving actions/projects
- Measure specific results

Communicate your success to

- Budget developers
 - Your co workers and team members
 - Public/taxpayers
 - Building Occupants
-
- For this discussion – focus on decision makers

Communicate Regularly

- Once is not enough
- Set up schedule for reporting
- Use many methods

What communication tools do you use?

Example Communication Tools

- Newsletter
- E-mail announcement
- Report
- Poster
- Awards
- Web site
- Presentation
- Press release

Show Savings with Graphics

- Dollar savings
- Energy Savings
- One time and over time

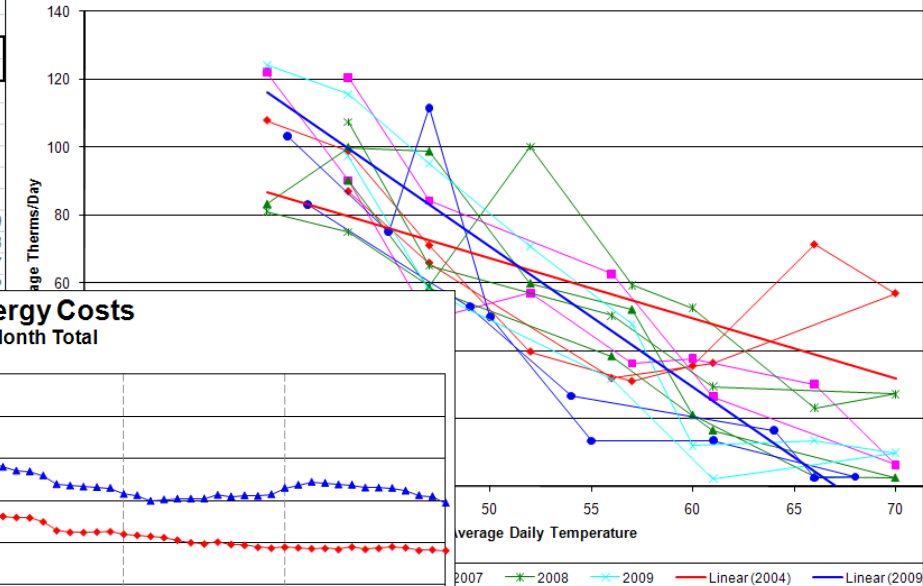


Target the type of information to the audience

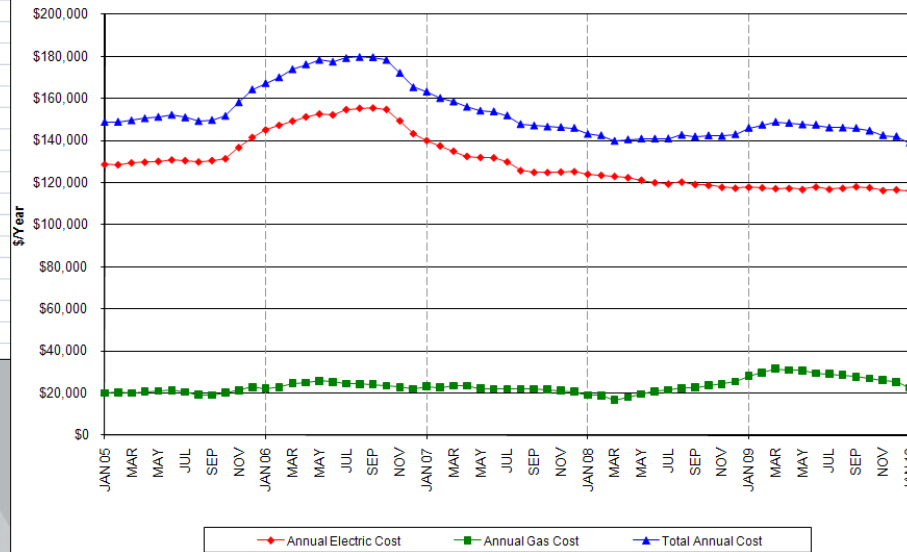
Facility Name	Sample Office	Enter data in yellow cells	
Address	1234 Fifth Avenue		
City, State	BELLEVUE, WA 98004		
Square Footage	80,000 Sq.Ft.	Current Energy Use Index	80,732 Btu/Sq.Ft./Year
Elec. Acct #	123-456-789	Benchmark Energy Use Index	80,452 Btu/Sq.Ft./Year
Subaccount #	345-678-900	Annual Electricity Use	16.6 kWh/Sq.Ft./Year
Meter #	Z00987654	Annual Natural Gas Use	0.24 Therms/Sq.Ft./Year
Elec. Rate ID	26E-C-KV		

Month	Year	To Date	# Days	kWh Usage	kW Demand	kVarh	Electric Cost	Heating Degree Days	Average Daily Temp
JAN 04	2004	1/22/2004	31	143700	315	54300	\$ 9,867	790	39
FEB		2/23/2004	32	151500	315	59400	\$ 10,276	680	43
MAR		3/23/2004	29	138600	357.9	52800	\$ 9,919	494	47
APR		4/21/2004	29	139200	419.4	54600	\$ 9,589	367	52
MAY		5/20/2004	29	148500					
JUN		6/21/2004	32	160800					
JUL		7/21/2004	30	169200					
AUG		8/20/2004	30	222900					
SEP		9/21/2004	32	173400					
OCT		10/20/2004	29	147300					
NOV		11/19/2004	30	146100					
DEC		12/21/2004	32	150600					
JAN 05	2005	1/21/2005	31	135300					
FEB		2/22/2005	32	146400					
MAR		3/23/2005	29	144900					
APR		4/21/2005	29	137400					
MAY		5/20/2005	29	143100					
JUN		6/21/2005	32	164400					
JUL		7/21/2005	30	160500					
AUG		8/22/2005	32	198900					
SEP		9/21/2005	30	175500					
OCT		10/20/2005	29	163200					
NOV		11/21/2005	32	177600					
DEC		12/21/2005	30	157200					

Gas Use vs Outdoor Temperature



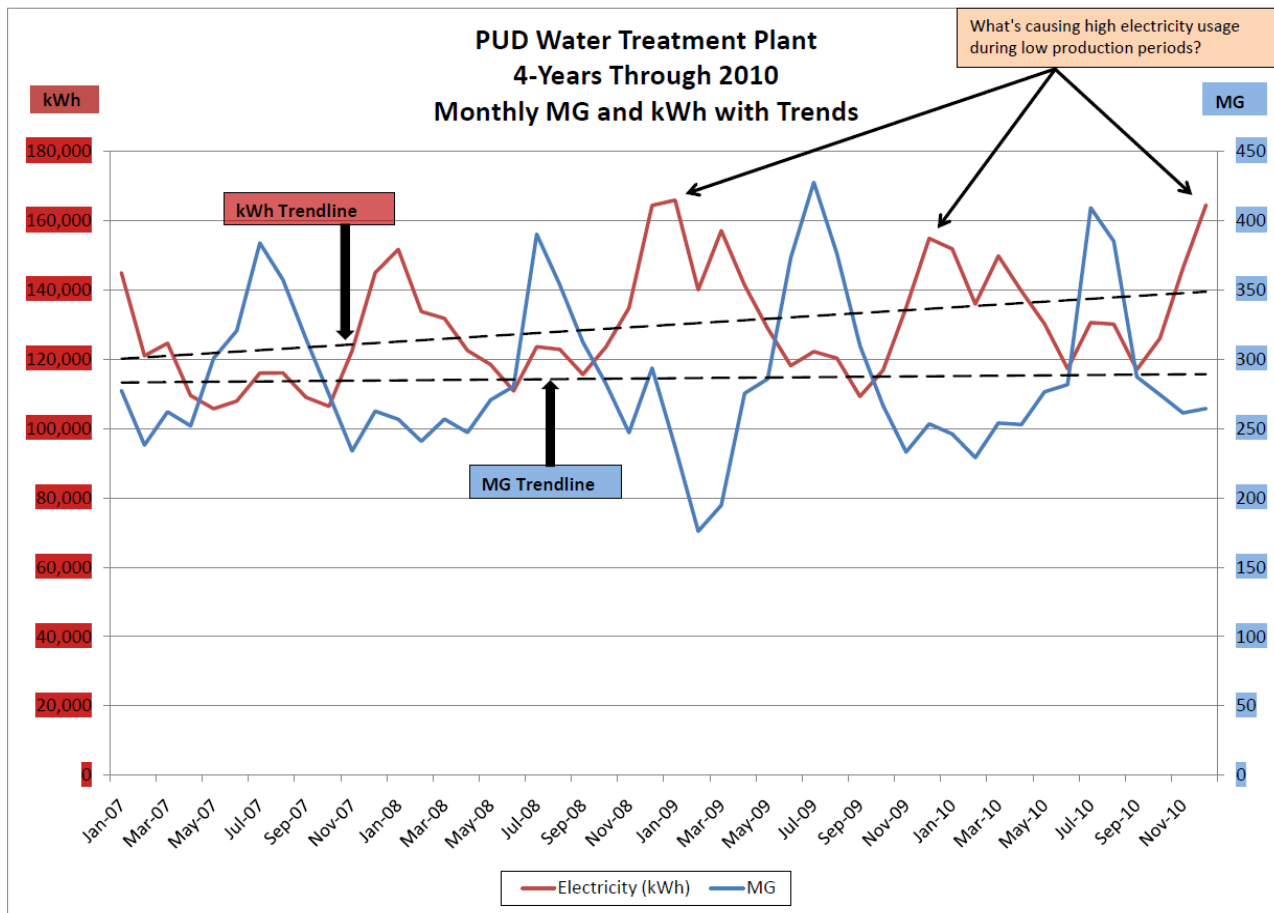
Annual Energy Costs Rolling 12 Month Total



Examples

- It was not so easy to find good examples – why is that?
- Good examples, the credit goes to energy manager or RCM doing the work.
- Links in small print.
- You DO NOT have to read and understand these examples.

Data for meeting with facility manager



Don't underestimate personal contacts



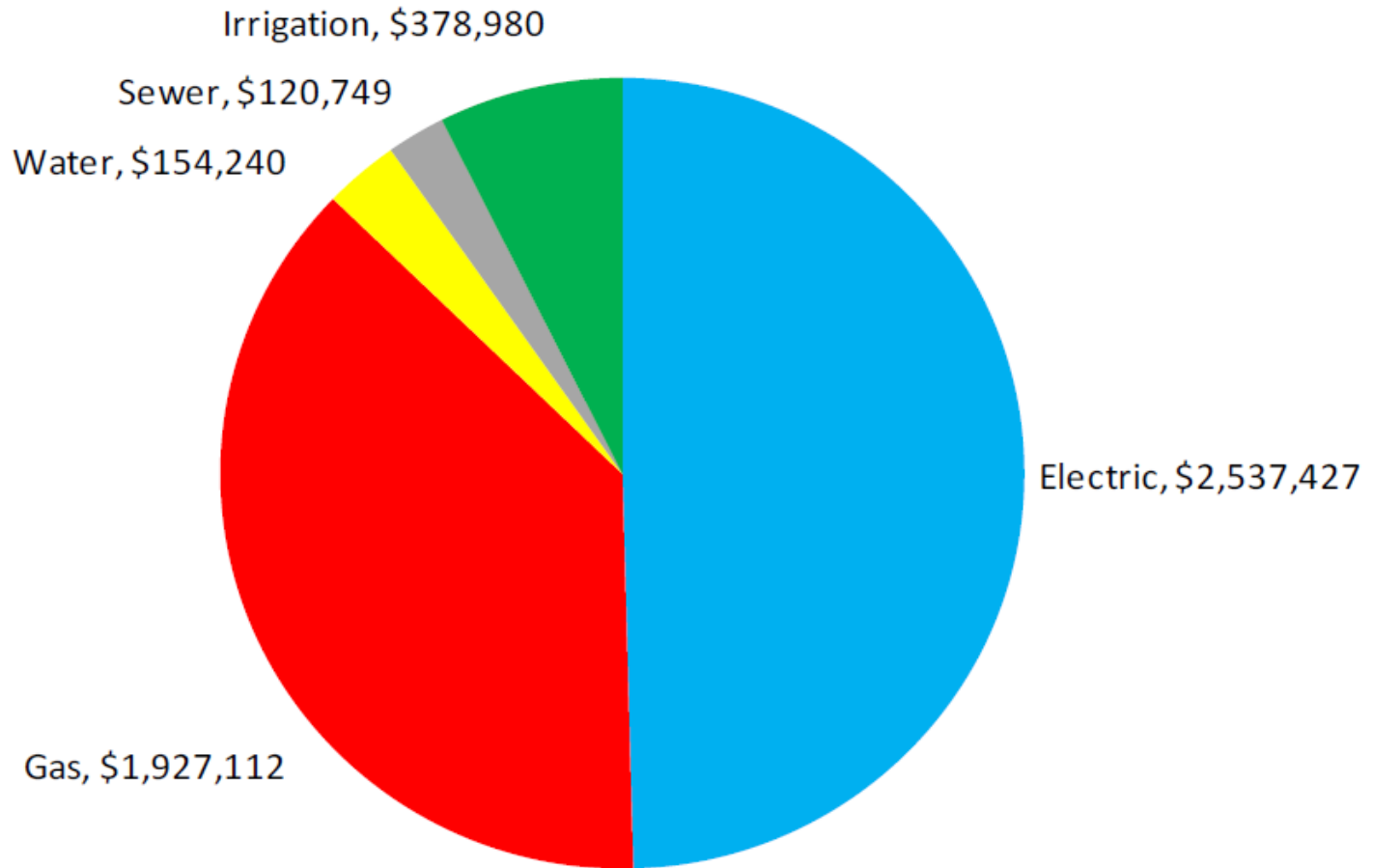
Decision makers have different needs

- What are their interest areas?
 - Dollar savings
 - Greenhouse gas reductions
 - Energy savings
 - Comfort
 - Productivity
 - Air Quality
 - Health

Provide context

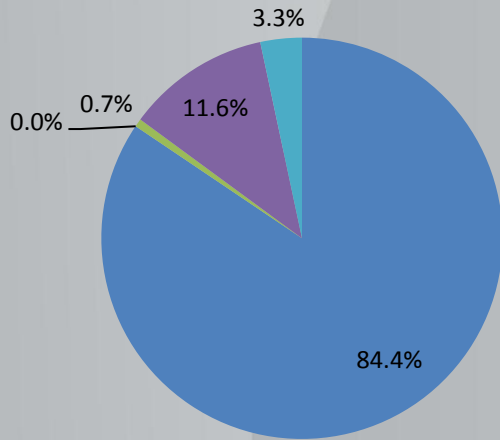
- Council adopted policy in 2009
- Staff has been taking actions
- Here is how much is being spent compared to the rest of the budget

D-11 FY 09-10 Utility Cost Breakdown Total Cost \$5,118,508

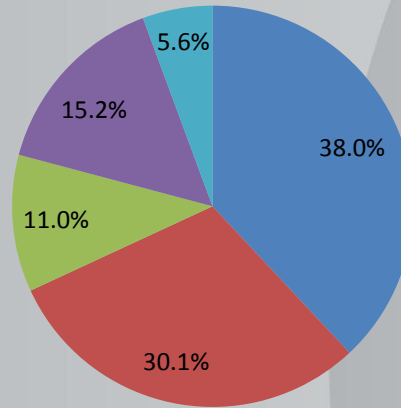


Agency resource usage

Chimacum 2010 Utility Cost

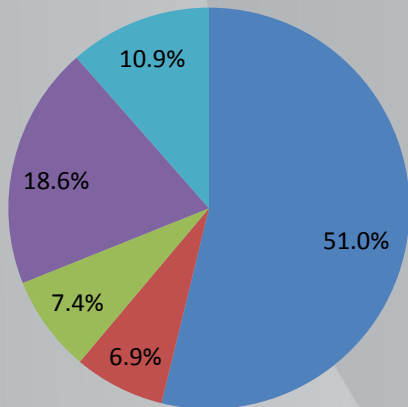


Fort Worden 2010 Utility Cost

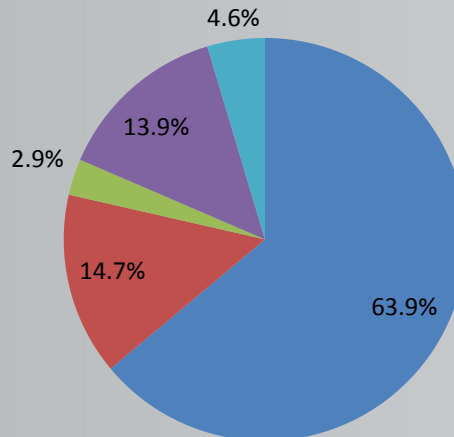


- Electric
- Heating Oil
- Propane
- Water
- Refuse

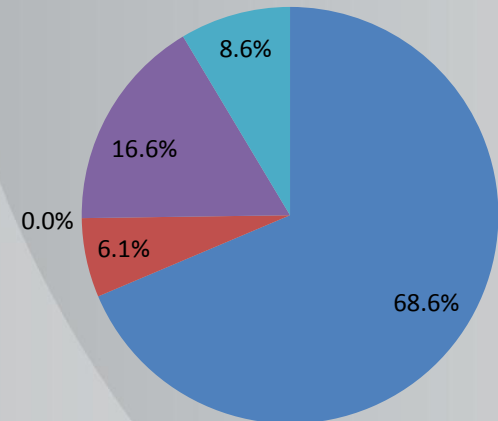
JeffCo 2009 Utility Cost



City of PT 2010 Utility Cost



PTS 2010 Utility Cost



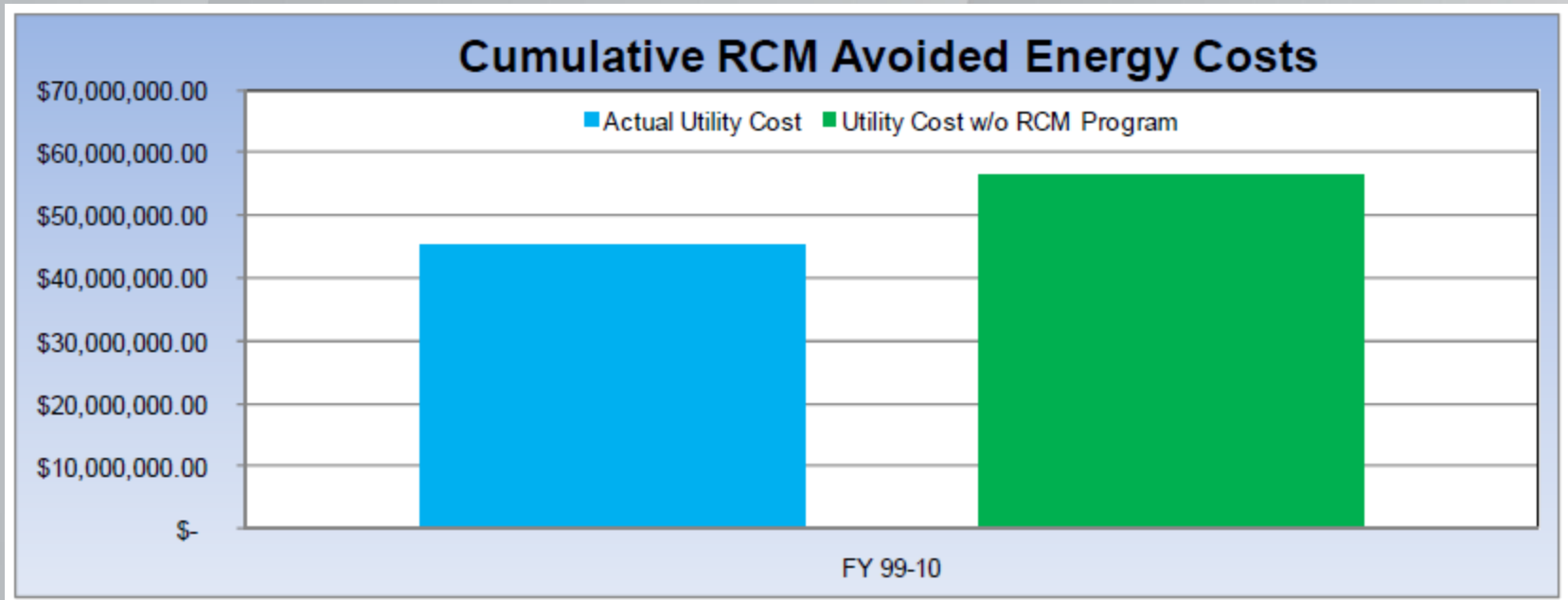


Energy



- Schools spend more money on energy than on computers and textbooks combined
- Energy conservation can cut costs and provide excellent learning opportunities

Avoided Cost

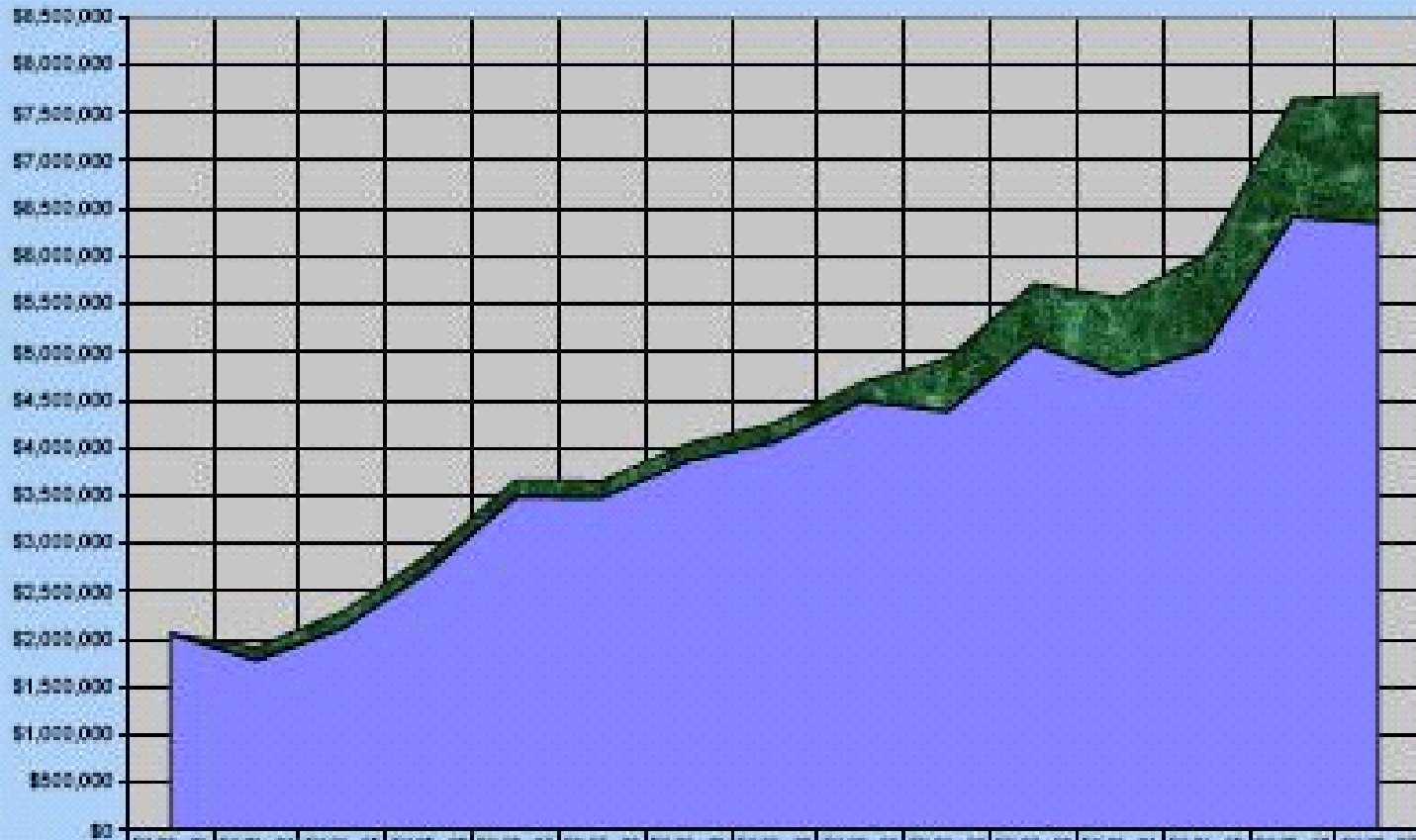


- Colorado Springs School District

Avoided Cost

Total Utility Savings

FY 07 1.7% Reduction



	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Total BCM Savings	\$0	\$130,271	\$179,232	\$171,785	\$173,719	\$172,285	\$175,405	\$184,439	\$185,570	\$200,710	\$234,940	\$212,432	\$281,288	\$1,233,760	\$1,238,788
Avoided Expenses	2,052,823	1,788,127	2,115,880	2,719,881	3,488,852	3,480,792	3,334,702	4,257,889	4,802,871	4,879,442	5,087,842	4,170,863	3,031,858	5,415,041	2,048,041

Cost Avoidance Summary

- Four and a half years of data
 - Sept 2005 to Feb 2010
- **Total program savings=
\$2,388,751**
- The equivalent cost of two years of electricity for all our buildings.

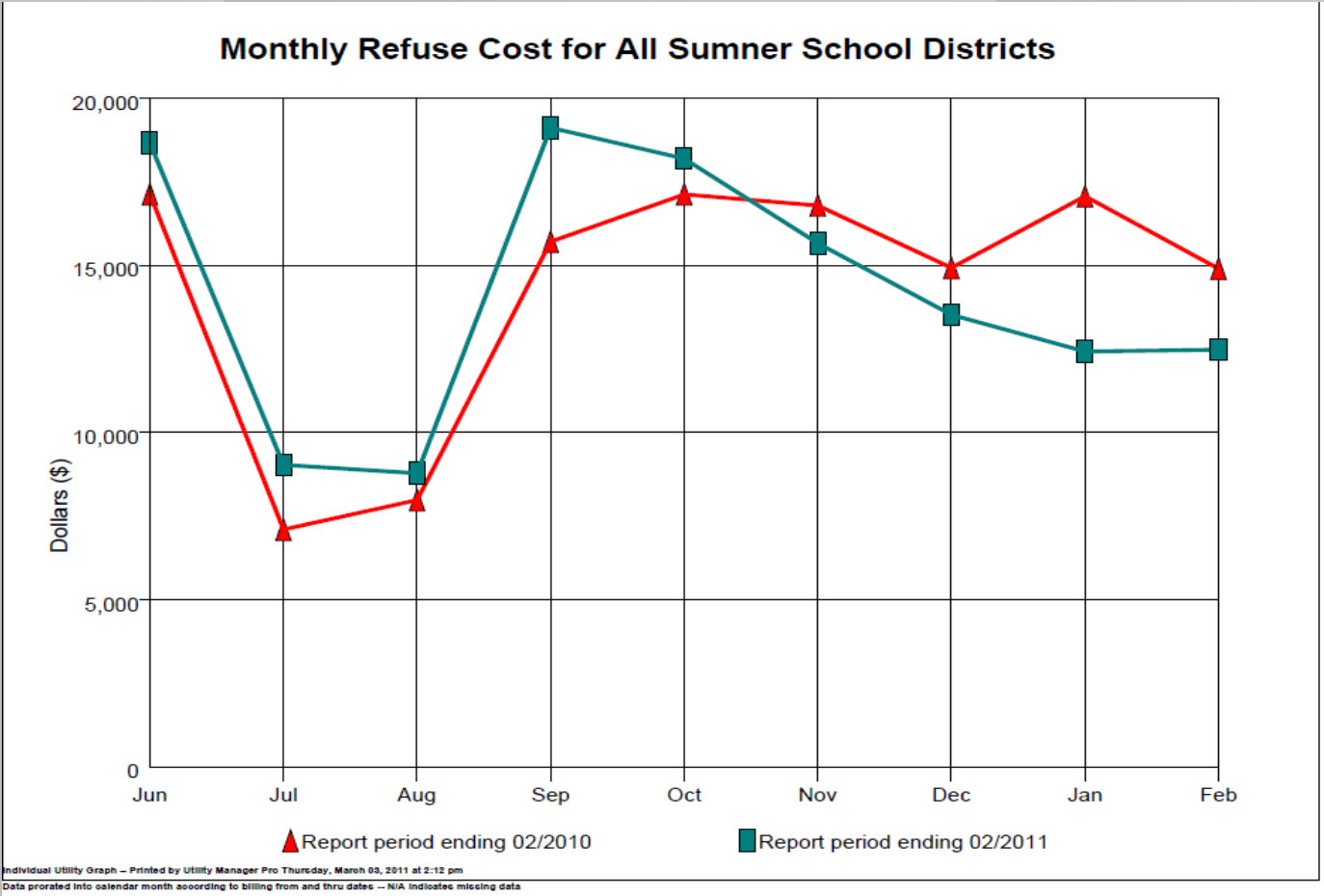
Electricity Equivalent

Over four years, we have reduced our kilowatt usage by

11.8 Million Kilowatts

This is the equivalent of the electricity usage for **24 of our schools for an entire year.**

Simple images



Success Story

Energy Management Example



- Identified Human Services Building as underperforming
- Shut down natural gas boilers during summer
- Moving out of building in January 2011
- Saved \$121,218 by reducing energy use.



Pierce County
Office of Sustainability

Olympia School District Newsletter

The Green Wire

Resource Conservation News April 2011



Inside this issue:

Reduce Greenhouse Gas Emissions	2
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Well Fed and Well Read	4
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Energy Myths

Myth: The higher you set your heater's thermostat, the faster the room will warm up.

Fact: Whatever the setting it takes the same amount of time for a room to warm up. Setting the thermostat all the way up (and we've seen 90 degrees)

Earth Day Every Day

April 22nd is Earth Day so allow me to recognize those who take action and make a difference by helping the planet.

- Teachers recommended and Support Services has implemented processes to reuse plastic bags instead of removing them daily.
- Custodians have found ways to schedule work with minimum use of lights and heat after hours.
- Students and community volunteers have monitored our compost lines so that we have the most successful food and paper composting schools in the state.
- Students and community volunteers have restored habitat and toiled at wetlands and giving gardens.
- Students and teachers have conducted environmental inquiries and produced impressive research projects on a variety of important scientific and social studies topics.



Newspaper Story

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Eatonville, WA
Currently | [Hourly Info](#) | [15 Days](#) | [Videos](#)
Partly sunny **60°F** RealFeel®: 64°F
Winds: NW at 7 mph
Weather Forecast | Weather Maps | Weather Radar

Your Extended Forecast
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Thursday Partly cloudy 61°/41°
Friday Cloudy with rain 59°/42°
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11/12/2008 10:14:00 AM
Bethel saves \$1.4 million in energy costs

by Bruce Smith

Through a robust program of energy conservation, Bethel schools have been able to save \$1.4 million over the past three years, the district announced last week at its Board meeting.

Michael Knaack, head of the district's Energy Operations Department, told members that the \$1.4 million represents about one-quarter of the total energy used by the district's 26 schools and administrative buildings. The majority of savings comes from a reduction in the consumption of electricity.

"I basically go around turning off lights," Knaack said good-naturedly, but his job is actually much more dynamic.

Knaack has developed a comprehensive program that involves both the installation of energy-efficient appliances and HVAC equipment, along with new maintenance practices that reduce energy consumption. Enlisting the support of the district's maintenance and custodial staff, Knaack says clean-up crews now turn off electricity in sections of a school that have been cleaned or are waiting to be serviced.



Michael Knaack, the Manager of the Energy Operations Department for the Bethel School District, has developed an energy conservation program that has saved the district \$1.4 million over three years.

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Michael Knaack, RCM, Bethel School District

Savings in the news RCM position paid for by savings

The Olympian, May 10, 2005, B1

Energy conservation gains steam

BY HEATHER WOODWARD
THE OLYMPIAN

OLYMPIA — An Olympia School District effort to save money and conserve energy appears poised to result in a new policy that dictates ways to reduce lighting, heating and other costs.

Brittin Witzenburg, the district's first resource conservation manager, presented a proposal Monday to the Olympia School Board that would emphasize ways staff members can conserve energy.

Board members largely voiced support for the policy Monday though some had additional questions about wording and whether the proposal should extend to school construction practices as well.

In some cases, the proposed policy sets specific parameters.

For example, it states thermostats for hot water heaters for washrooms and

classrooms be set no higher than 110 degrees.

In other cases, the policy simply encourages the use of recycling, and reusing waste as much as possible.

"I think that the purpose of the policy is really to formalize the district's commitment to energy and resource conservation in our physical facilities and in the way that we operate within them," Witzenburg said.

Kathy Kinnaird, a Washington Middle School eighth-grade science teacher, said she would favor the board passing the policy.

"I think it would serve as a great reminder," she said.

The policy is one of several initiatives Witzenburg has launched since joining the district in November.

Other efforts include installing new thermostats in Olympia's 43 portables that will

save the district \$6,435 a year.

The district estimates that in her first year, Witzenburg will find savings of about \$75,000, or about \$10,000 more than the cost of her salary and benefits.

The total savings in the next three years could total \$120,000, district officials said Tuesday.

The effort comes in the wake of \$3.6 million in cuts the Olympia School Board made in the summer to the district's 2004-05 \$64.8 million budget.

The cuts were made to plug a \$2.2 million budget shortfall for the 2004-05 school year, to build a cash reserve for monthly expenses and to establish an emergency fund.

Heather Woodward covers education for The Olympian. She can be reached at 360-754-4225 or hwoodward@olympia.gannett.com.

Give Credit for Successes

- Develop support from within
- Announce successes
- Spread on the positives

Shamelessly Seek and Celebrate Awards

From the Colorado Springs School District website

- **Leadership in Energy Management District 11 Energy Awards**

Twenty D11 Schools have been EPA Energy Star Certified

2001 AEE Energy Manager of the Year

2002 & 2003 CSU Water Saver Champion

2004 EPA Energy Star Leader

2005 EPA Leadership in Energy Management

2005 Energy Star Partner of the Year

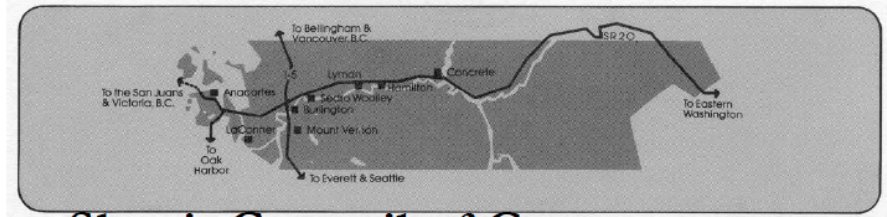
2006 Colorado Governor's Energy Champion

2007 EPA High Performance K-12 Design

2008 IFMA Resource Conservation Award

2008 CSU Utility Board -- Community Leader

Skagit Council of Governments News Release



Skagit Council of Governments

204 W Montgomery • Mount Vernon, WA 98273 • (360) 416-7871 • Fax (360) 416-7831 • ricb@scog.net

Ric Boge, Resource Conservation Manager

News Release

Date: April 25, 2011

From: Ric Boge, Resource Conservation Manager

Subject: **Local Governments Honored with Energy Conservation Awards**

The Skagit Council of Government's (SCOG) Resource Conservation Management Program recently issued several awards at its Annual Conservation Awards meeting to recognize energy conservation efforts and accomplishments in 2010. Overall, the Program had an 8.6% reduction of gross energy usage in 2010 for daily operations of the 125 facilities in the Program. Eight of the nine local jurisdictions participating in the Program achieved reductions in the facilities they own and operate:

- City of Sedro-Woolley
- City of Burlington
- City of Anacortes
- Skagit County
- Swinomish Indian Tribal Community
- Port of Skagit County
- Town of La Conner
- PUD #1 of Skagit County.

Special Recognition Certificates were presented by Lori Moen, Supervising Engineer for Puget Sound Energy's RCM Support Group, and Ric Boge, SCOG Resource Conservation Manager. Certificates were awarded in each of the following categories to key individuals responsible for the accomplishments:

- *2010 Outstanding Percentage Reduction in Energy Usage by a Single Facility: Sedro-Woolley Municipal Building – more than 16.9% reduction in gross energy use!* Nathan Salseina, Operations Lead.

Ric Boge, Shared RCM, Skagit
Council of Governments

Colorado Springs School District Annual Energy Report

- D-11 Annual Energy Report FY09-10 **EXECUTIVE SUMMARY**
- The Energy Manager at Colorado Springs School District 11 (D-11) is committed to excellence in management and stewardship of District resources to facilitate opportunities for educational excellence. In FY 09-10 we decreased weather corrected energy use per square foot by 5.3% over FY 08-09 and by 6.4% over our previous 3 year average. Utilities spending increased by 8.2% over FY 08-09 spending due to rate increases and a colder winter. The 8.2% increase in utilities spending is much lower than anticipated due to our continued conservation efforts. Our efforts resulted in decreased consumption of each utility over its previous 3 year average and the return of approximately \$505,000 of the utility budget to the district's general fund.

<http://www.d11.org/fotc/energy/Energy%20reports/Annual%20Energy%20Report%20BOE%20FY%2009-10.pdf>

Practical tips

- PowerPoint is NOT the perfect tool!
- Schedule ahead for your place on the agenda
- Recruit help for graphic images
- Recruit help for writing
- Use agency standards for communications
- Check protocols for news releases
- Seek feedback to improve

Stars

- Thanks to those who provided examples
- Jay Donnaway – Sumner SD, Bonney Lake, and City of Buckley RCM
- Michael Knaack – Bethel School District RCM
- Ric Boge – Skagit Council of Governments Shared RCM
- Colorado Springs School District
- Lake Washington School District
- Brian Goldstein – Jefferson County area Shared RCM
- Bonnie Meyer - Olympia School District
- Ryan Dicks - Pierce County Office of Sustainability

Acknowledgement

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Resource Conservation Management

<http://www.energy.wsu.edu/PublicFacilitiesSupport/ResourceConservation.aspx>

WASHINGTON STATE UNIVERSITY



EXTENSION ENERGY PROGRAM

www.energy.wsu.edu