

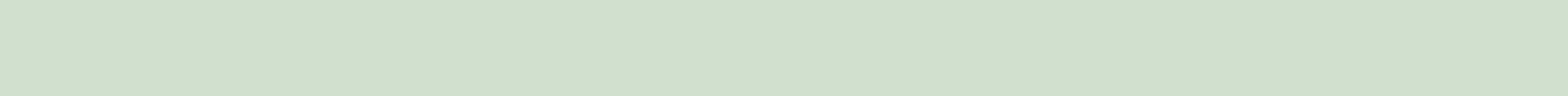


Energy Efficiency Programs

Columbia Water & Light

Current Programs




- **Energy Audits**
 - **Low Income Customer Programs**
 - **Rebates**
 - **Tree Power**
 - **Super Saver Loans**
 - **Load Management**
 - **CFL Rebate “Change a Light Change the World”**
 - **Home Performance with Energy Star**
 - **Online Energy Audit**
 - **Energy Star Home**
 - **Water Conservation**
- 

Current Programs *(continued)*

- **Infrared Thermography**
- **Lighting Rebate**
- **Ultra Sonic Leak Detection**
- **Building Operator Certification Program**
- **Load Shedding**
- **Interruptible Customers**
- **Power Quality Analysis**
- **Marketing & Educational Programs**
- **Energy Tips on the Columbia Channel**
- **Special Events**

Energy Audits



- **Residential**
 - Savings: 174,168 KWH (/ yr)
 - **Commercial & Industrial**
 - Savings: 411,500 KWH & 424 kW
 - **Energy Efficiency Office Calls**
 - FY '08: 2,322 vs. FY '07: 690
- 

Current Rebate Offers

- Air Conditioners
- Solar Water Heaters
- Solar PV System
- Heat Pumps
- Ground Source Pumps



Tree Power

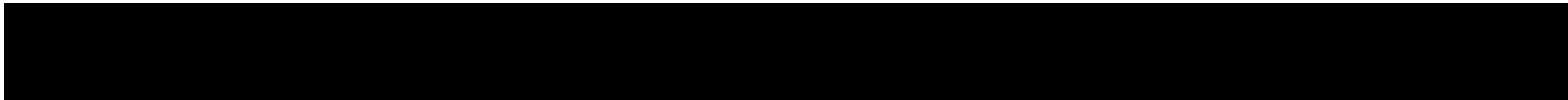
- Landscape Audits – 390 Assessments / Year



Super Saver Loans

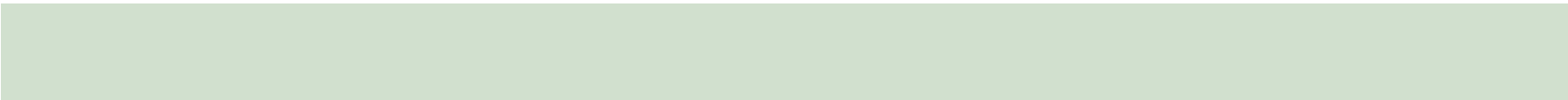


Residential and Commercial

- Low interest loans for AC replacement, Heat Pumps, Insulation, and Solar
 - In 2008 nearly \$500,000 has been loaned to a total of 53 customers
- 

Load Management



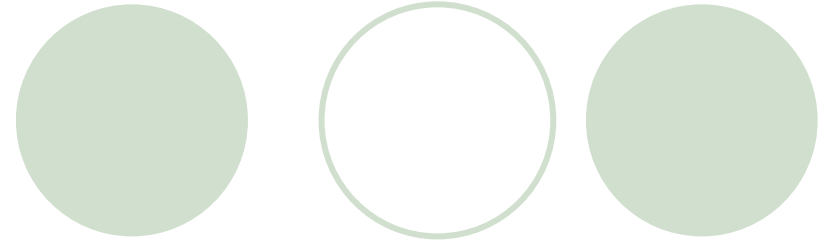
- Residential, commercial - air conditioner cycling during peak conditions
 - 18,491 load management switches installed, 1,021 on the waiting list
 - Goal is a 10% incremental penetration per year
- 

CFL Rebate

'Change a light change the world'

- Kick off October 1, 2008 participating stores – HyVee and Westlake's Hardware.
- 2008 Campaign: projected 10,000 bulbs to be purchased

Home Performance with Energy Star



- Certified contractors assess home energy efficiencies
- Homeowner completes energy improvements
- Contractor assesses improvements
- W&L rebates home owner and contractor



Home Performance with Energy Star *(continued)*

- 60 Assessments since January 10
- 8 Completed energy efficiency improvements
- Efficiency improvements average 21%
- Rebates paid \$1,980
- 13 Contractors in the certification process
- 1 contractor certified
- 35 requests from contractors doing assessments
- Rebates \$4,700

Energy Star Home

- New Construction
- 2008 – Three homes certified
- Savings – 15% reduction over standard construction
- Rebates \$1,000




On-line Energy Audit

- Available in Fall 2008
- This service will offer customers the ability to conduct an on-line energy audit



Infrared Thermography



- Includes industrial customers and some special case residential and commercial, also internal infrastructure.
 - 8 Industrial Infrared studies: each reported fault of over 50 degrees = \$1,000 - \$5,000
 - Estimated total = \$64,000 a year
- 

Lighting Rebate

- 5 Commercial lighting rebates in 2008
- 5 in progress
- Rebates \$19,190
- Savings 387.5 kW




Ultra Sonic Leak Detection

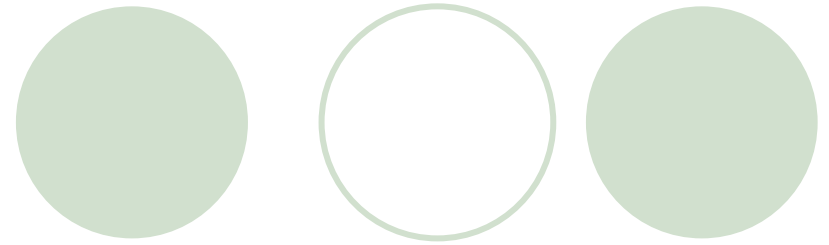
- Industrial – used on pneumatic compressed air systems
- 3 Analysis
- Savings per customer = \$15,000 - \$30,000 per year

Building Operator Certification Program

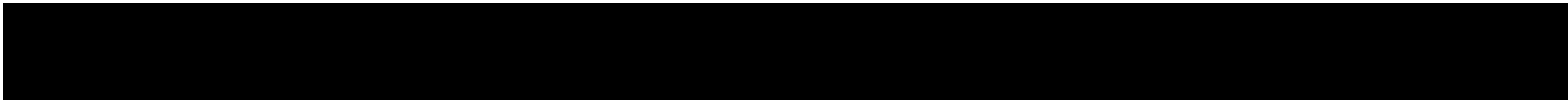


- Total of 47 facility managers are participating in the program
 - One industry averaged a \$20,000 savings first year, typical is \$12,000 per year
 - Estimated 5,676,000 kWh/yr
- 

Load Shedding

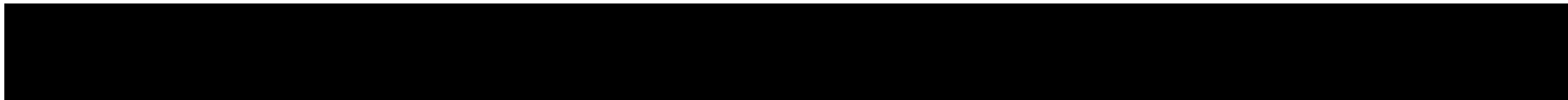


- 22 Load Shedding customers
- Participating customers reduce load upon request
- Customers are credited \$4/mo for each KW of reduction
- 4.5 MW reduction in 2007





Educational Programs

- Saturday Science
 - Energy Choices
 - PV demonstration at Columbia Career Center
- 

Educational Programs *(continued)*

- **Energy Choices** – Curriculum supplement provides over 1,200 contacts per year
 - Savings – 250 kWh Per Student/yr
- **Saturday Science** – 90 students / year

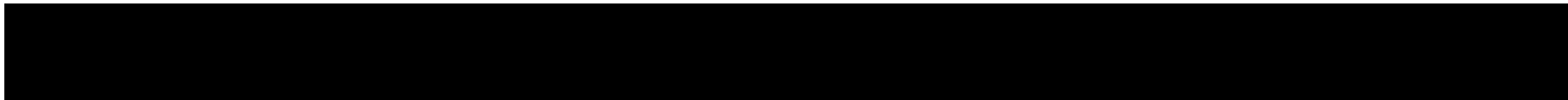
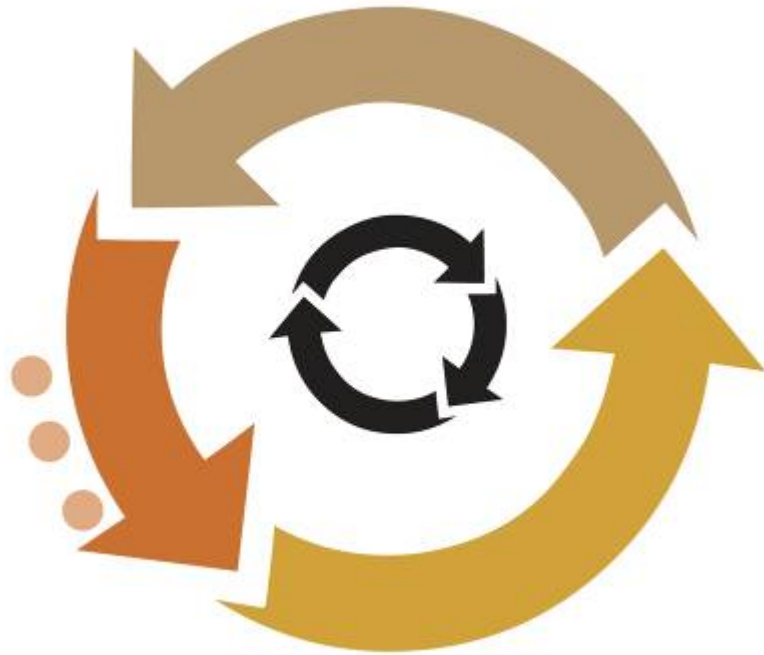
Marketing, Advertising and Promotional Events



- CW&L marketing budget for 2008 = \$140,000 for radio, TV and newsprint in addition, City Source newsletter and Columbia Channel

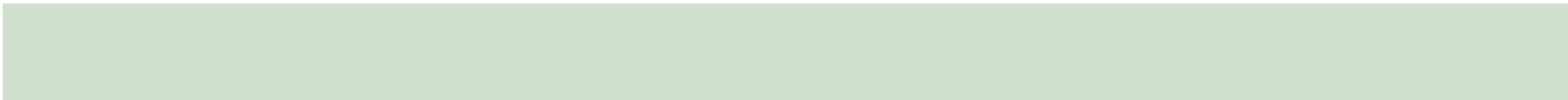
Energy Tips on the Columbia Channel

- 12 features presented each year



Special Events



- Earth Day, Arbor Day, Adult Lifestyles Event, HBA Home Show, Columbia Business Expo, Paul Pepper Show, CMCA programs, Columbia Civic Day, Columbia Climate Change Coalition Solar Tour
- 

A stylized illustration of a landscape. The sky is filled with diagonal rays of yellow and orange, suggesting a sunrise or sunset. A bright orange sun is partially obscured by a range of blue mountains. The entire scene is framed by a thick, black, hand-drawn border.

New Horizons for Efficiency Programming

Columbia Water & Light



Pre 2008 Efficiency Programming

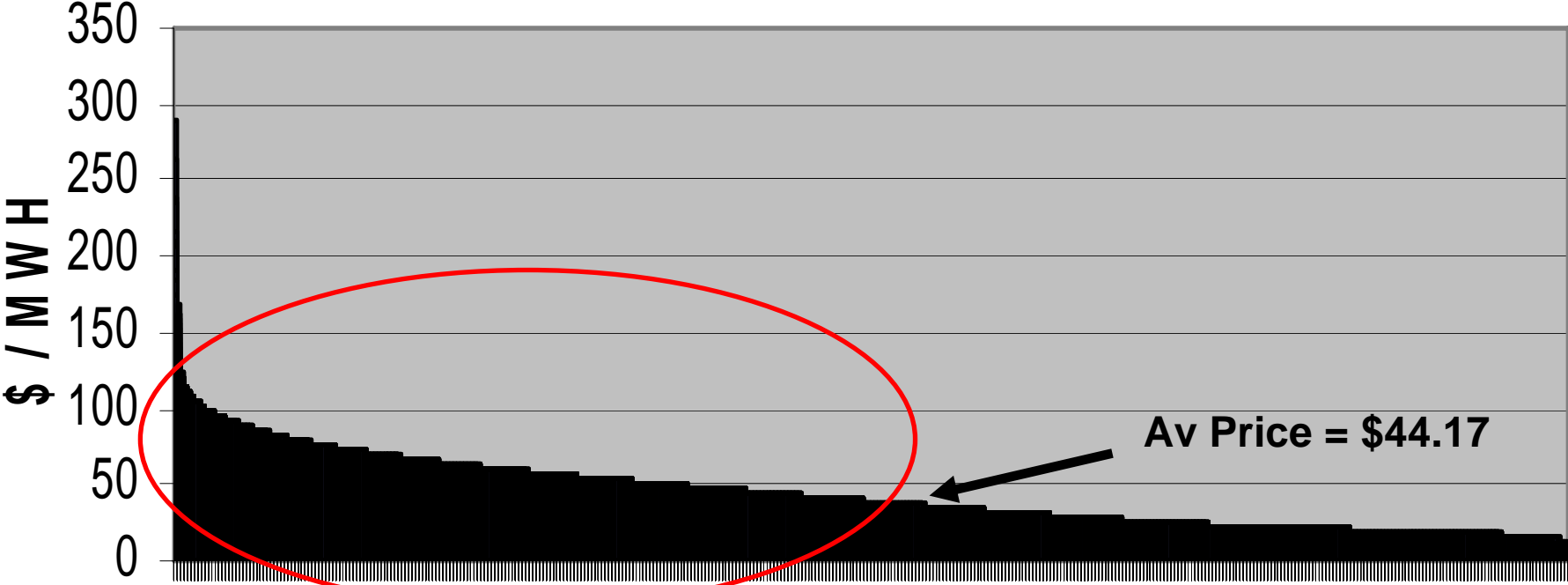
- Benefits based on Peak Demand Reduction
- Energy reductions viewed as counterproductive
- Peak demand priced as high as \$10/KW/MO



Post 2008 Efficiency Programming

- Benefits now based on Hourly Energy Cost
- Peak demand costs fall to below \$ 3/KW/MO
 - Strategic energy reductions now provide the lions share of benefits

2007 Hourly MWH prices MISO Day Ahead Market



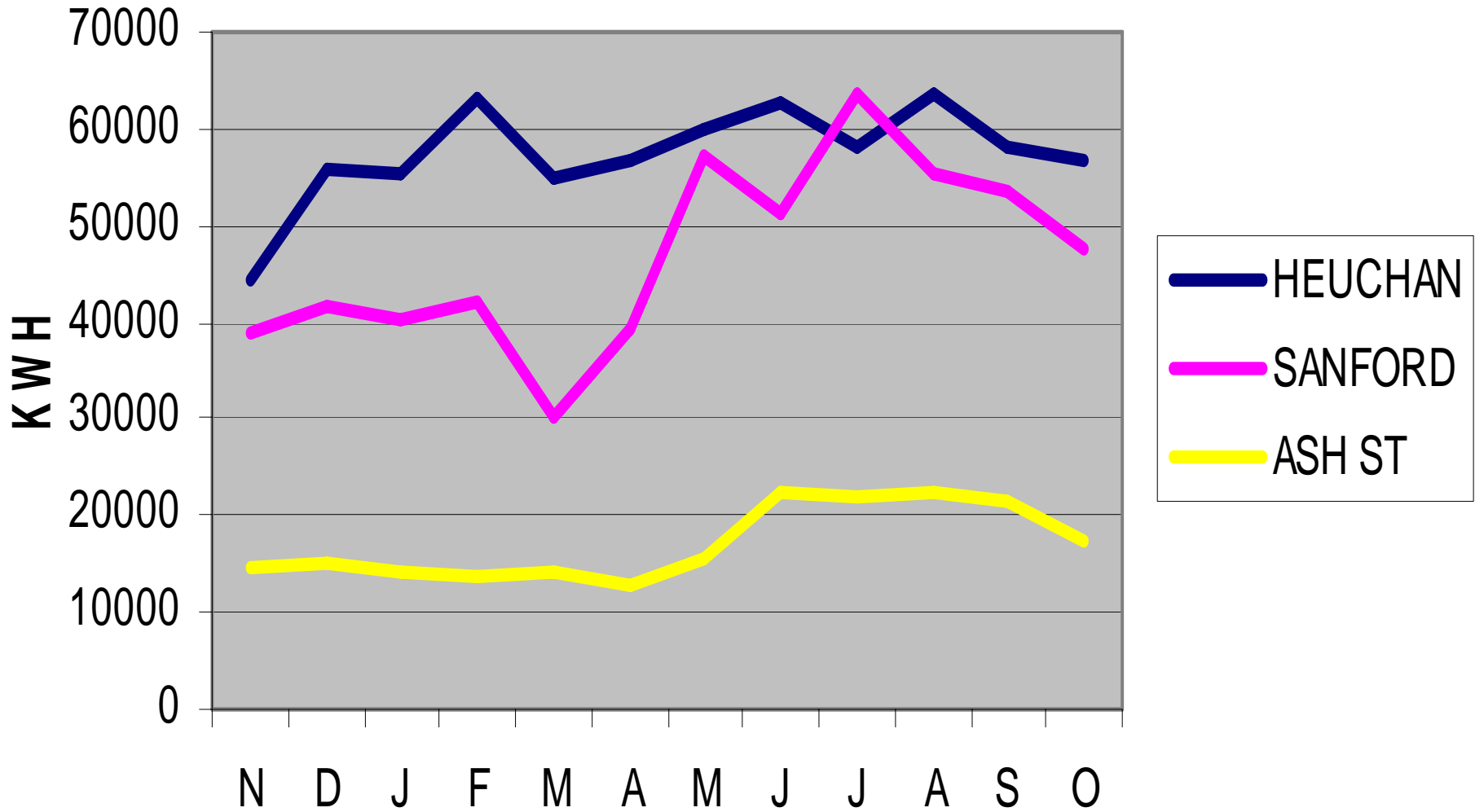
2007



Commercial AC

- Benefits now based on Hourly Energy Cost
- Peak demand costs fall to below \$ 3/KW/MO
 - Strategic energy reductions now provide the lions share of benefits

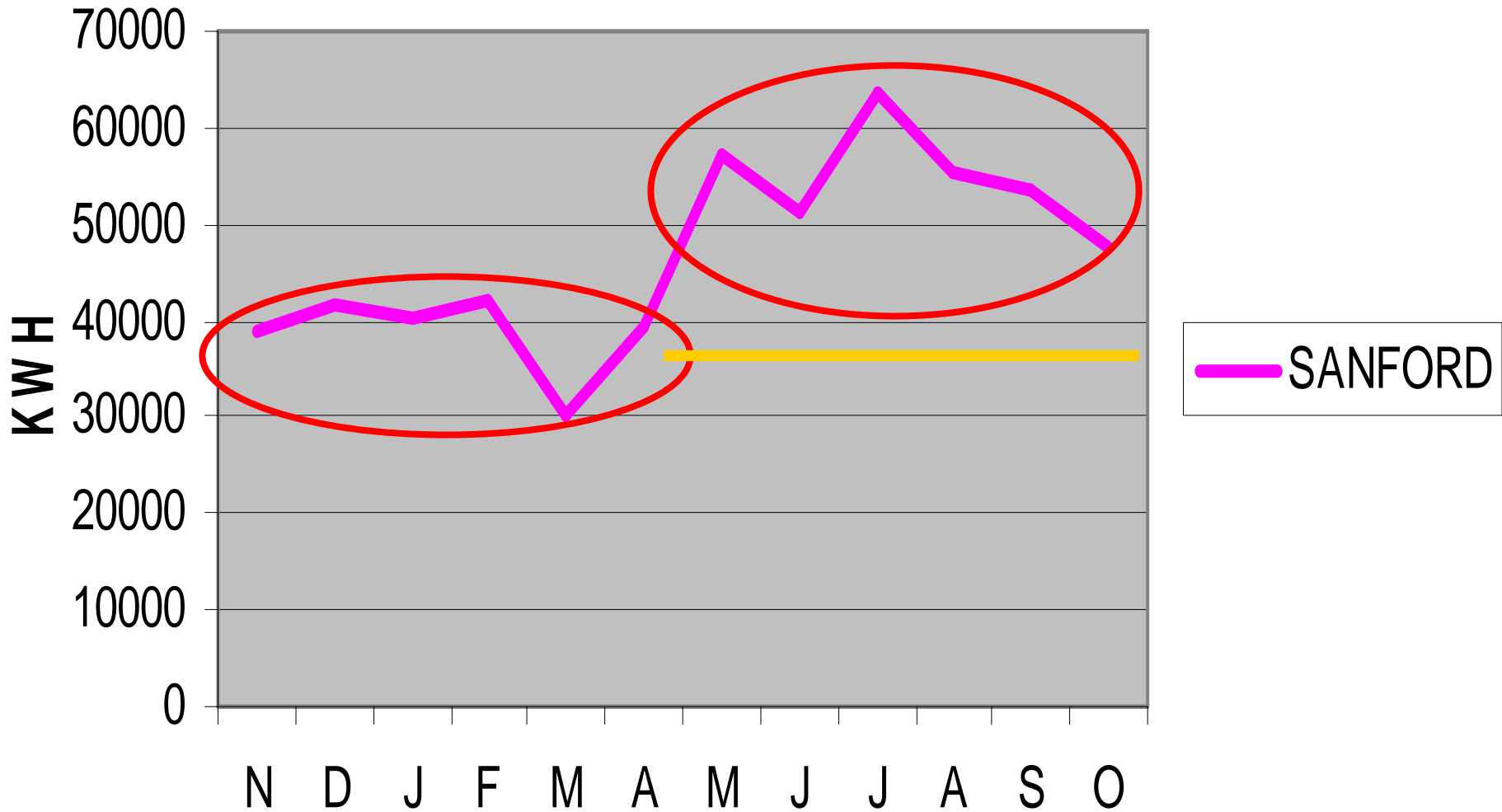
KWH USAGE



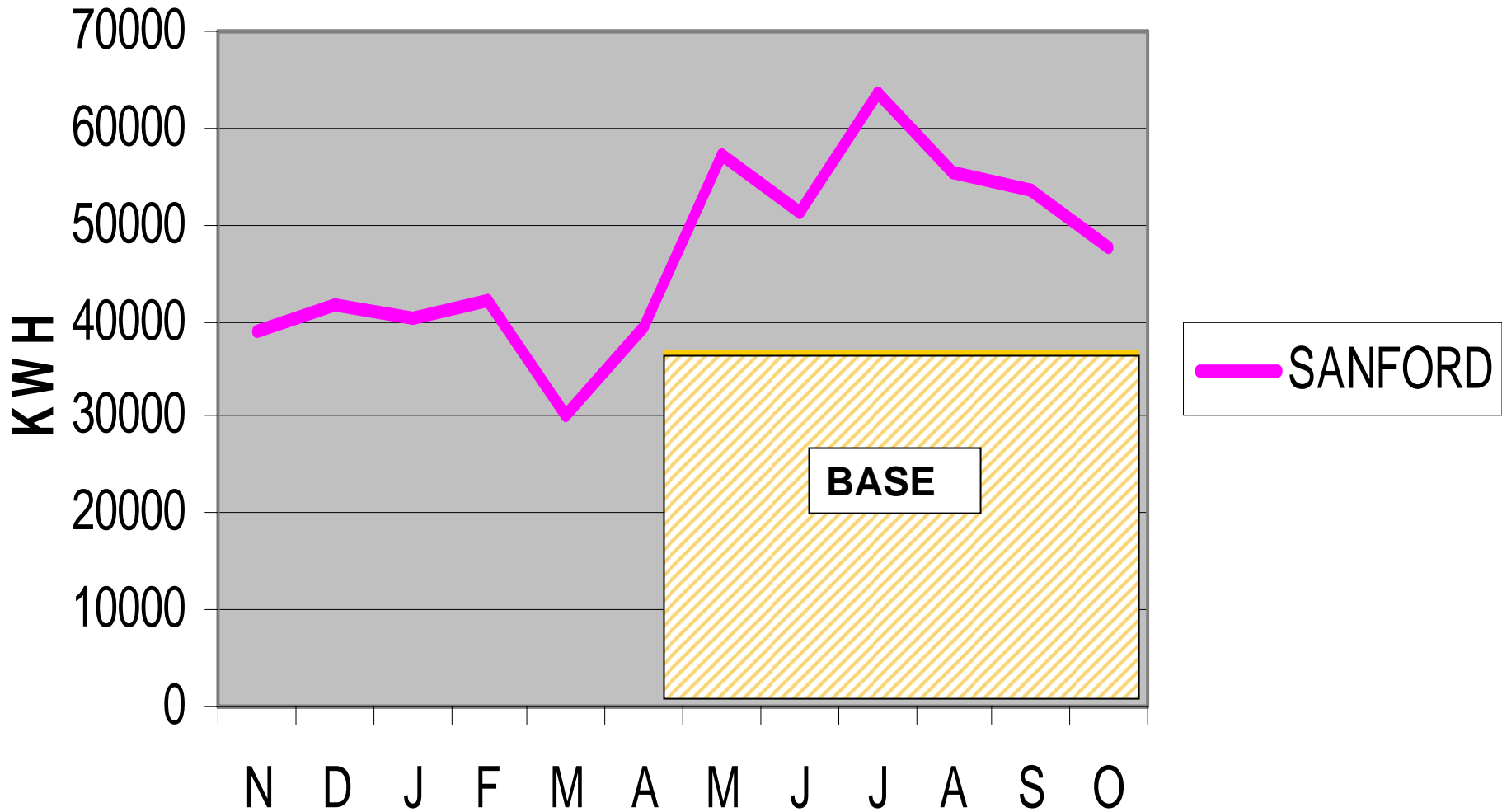
KWH USAGE



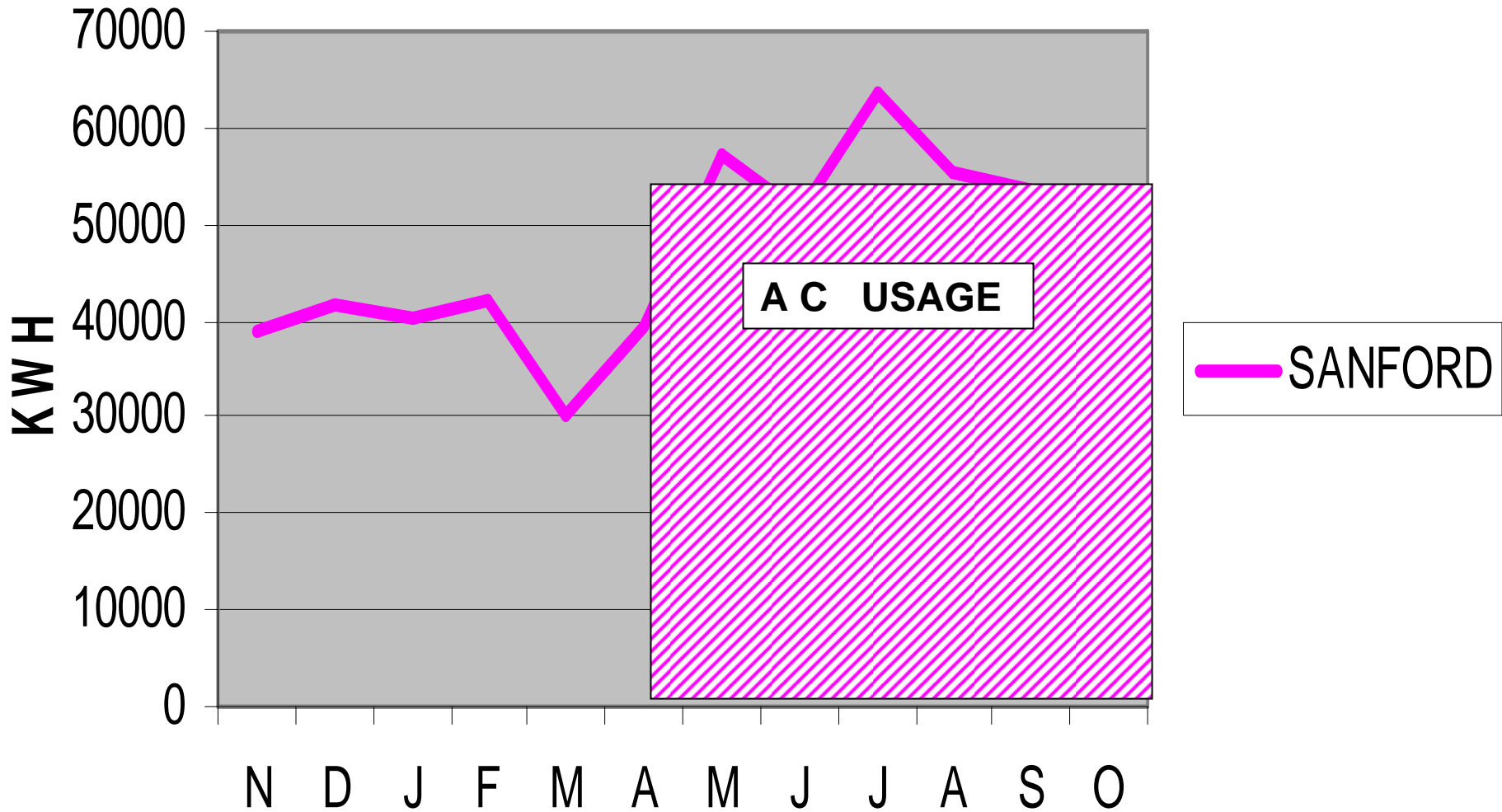
KWH USAGE



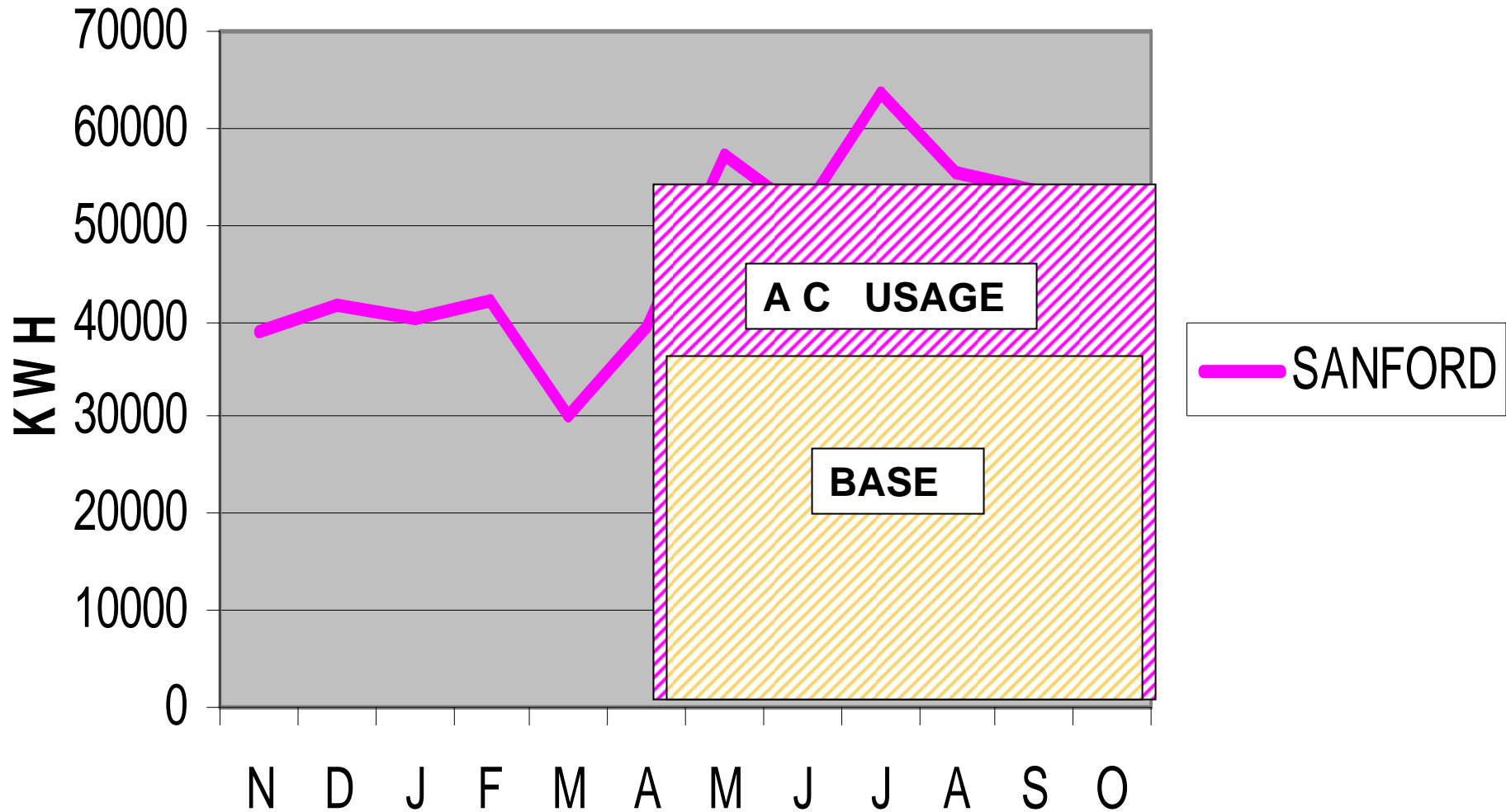
KWH USAGE



KWH USAGE



KWH USAGE





SANFORD BLDG

MONTHLY KWH USE

NOV 39000

DEC 41640

JAN 40440

FEB 42240

MAR 30360

APR 39480

MAY 57360

JUN 51120

JUL 63720

AUG 55560

SEP 53520

OCT 47520

SANFORD BLDG

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JAN 40440

FEB 42240

BASE = MAR 30360

APR 39480

MAY 57360

JUN 51120

JUL 63720

AUG 55560

SEP 53520

OCT 47520

AC INDEX =

SUMMER USE

SUMMER BASE

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SUMMER

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SUMMER INDEX

HEUCHAN 1.30

ASH ST 1.54

SANFORD 1.73



WATER  **LIGHT**



CONTACT INFORMATION

Tina Worley

Jay Hasheider

573-874-7325

www.gocolumbiamo.com

Columbia Water & Light