



Energy Efficiency in Restaurants and Grocery Stores

CARD, EECBG, and Climate Change Grants for Minneapolis and White Bear Lake



Why Small Restaurants and Grocery Stores?

Independently-owned food service businesses within the city limits of Minneapolis or White Bear Lake.

Small business owners typically do not necessarily have the time or resources

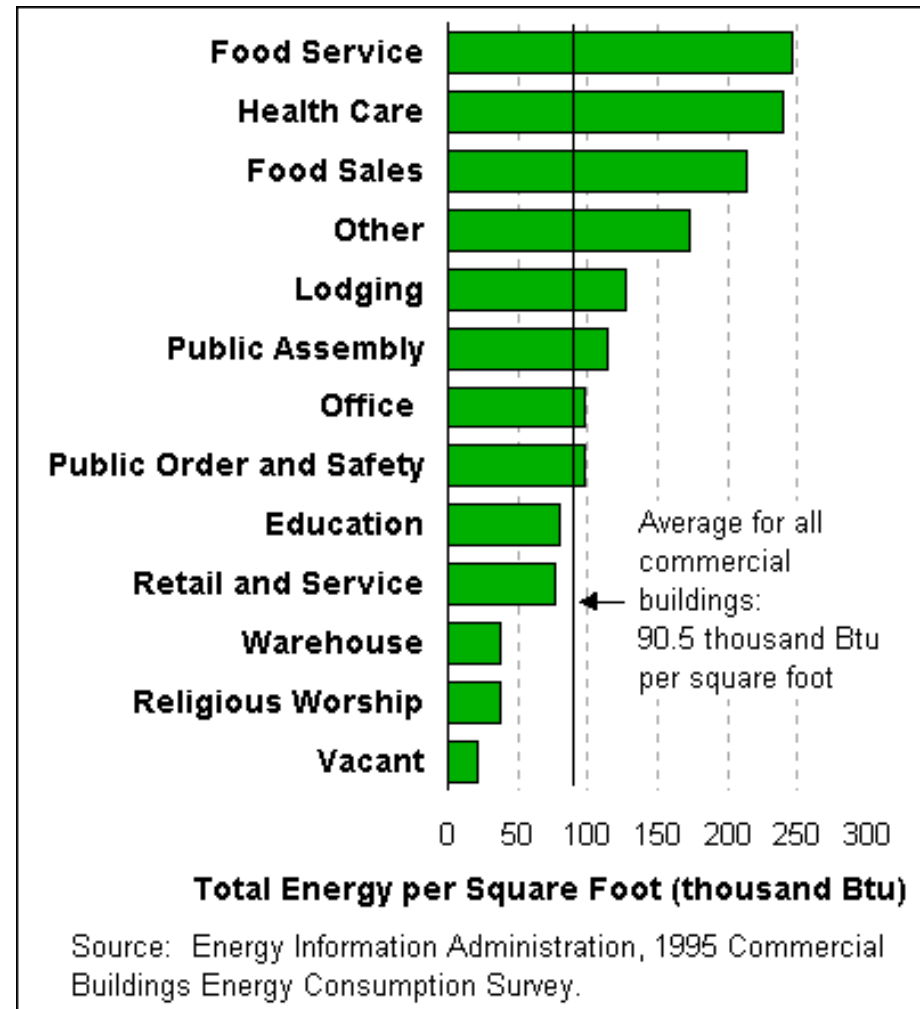
For 7,500 ft² Restaurant:

\$22,000 for Elect

\$12,000 for Gas

\$34,000 for Total

Low Cost Actions - save 10–15% or \$3,400 per facility



Food Service Energy Leadership Program:

- **Working with 50 businesses in MPLS and 20 in WBL.**
- **Operations & Maintenance focus – low cost retrofits.**
- **Benchmarking and tracking energy use for 3 years.**
- **Site visits to identify opportunities**
 - Equipment inventory
 - Control settings
 - Startup and shutdown schedules
- **Economic analysis of savings potential.**
- **Employee training on energy efficiency.**
- **Assistance with custom and prescriptive rebate applications.**

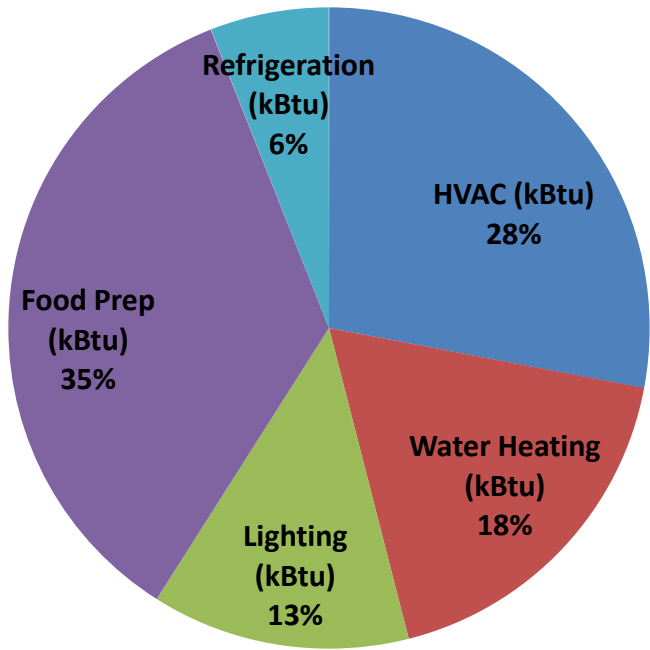


Goals and Outcomes:

- 1. Achieve 10% energy savings at each business – average of \$3,400.**
- 2. Educate and train local contractors on energy efficient technologies.**
- 3. Create more prescriptive rebates for the food service sector in Minnesota.**



Conservation and Quantitative Analysis:

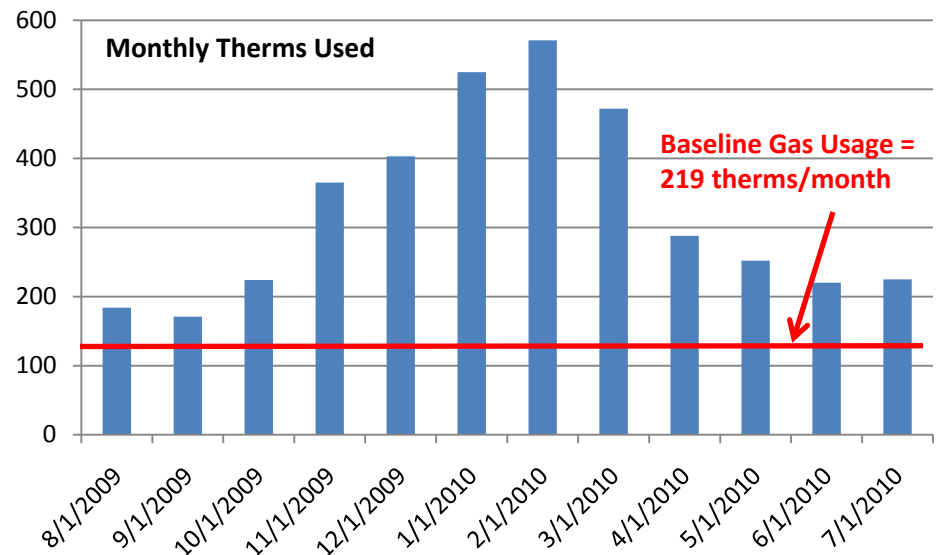
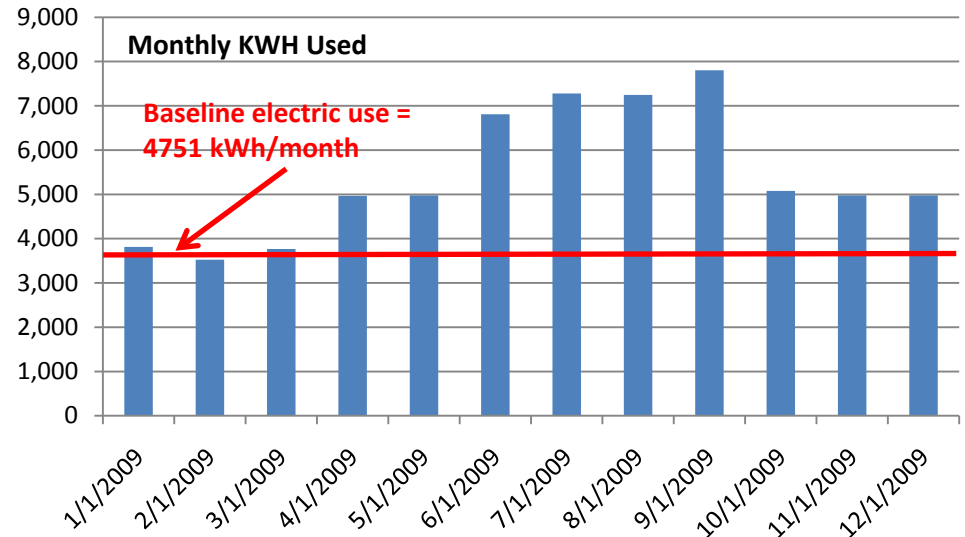


Electric

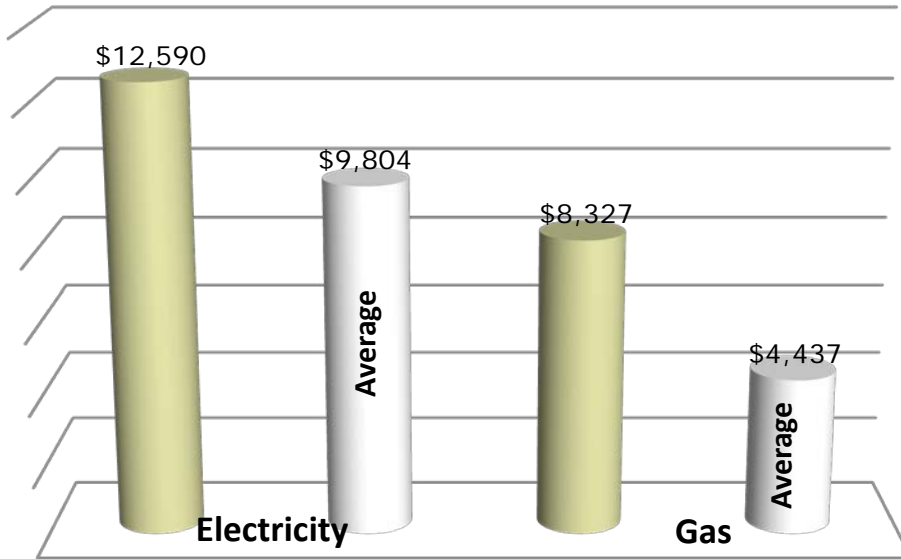
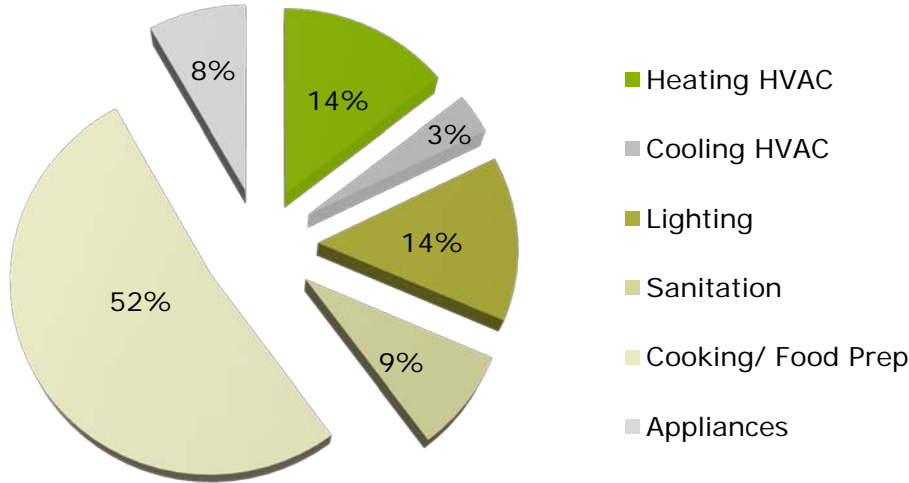
Lighting
Air Conditioning
Refrigeration

Gas

Food Prep
Heating
Water Heating

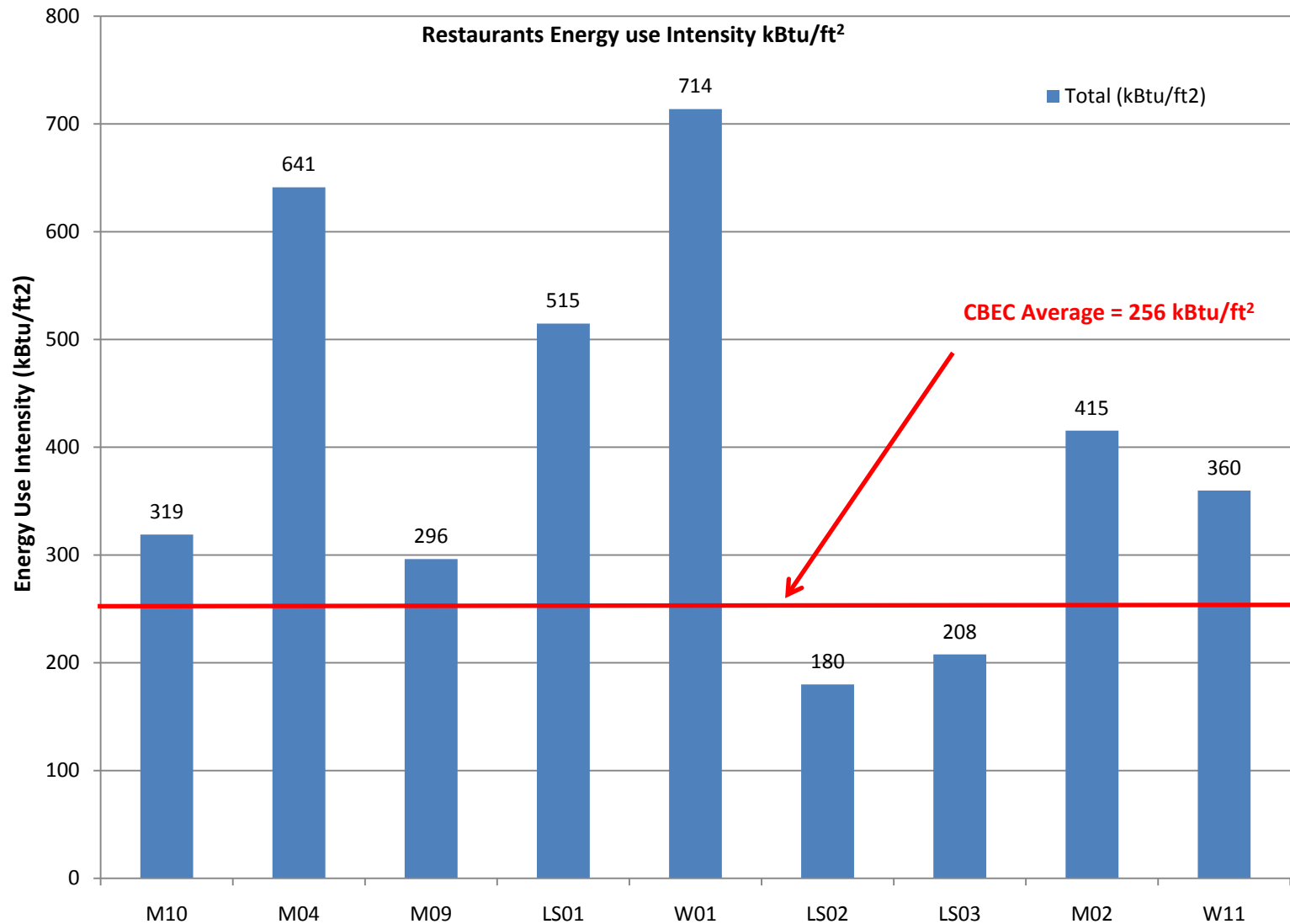


Examples of Low Cost Opportunities:

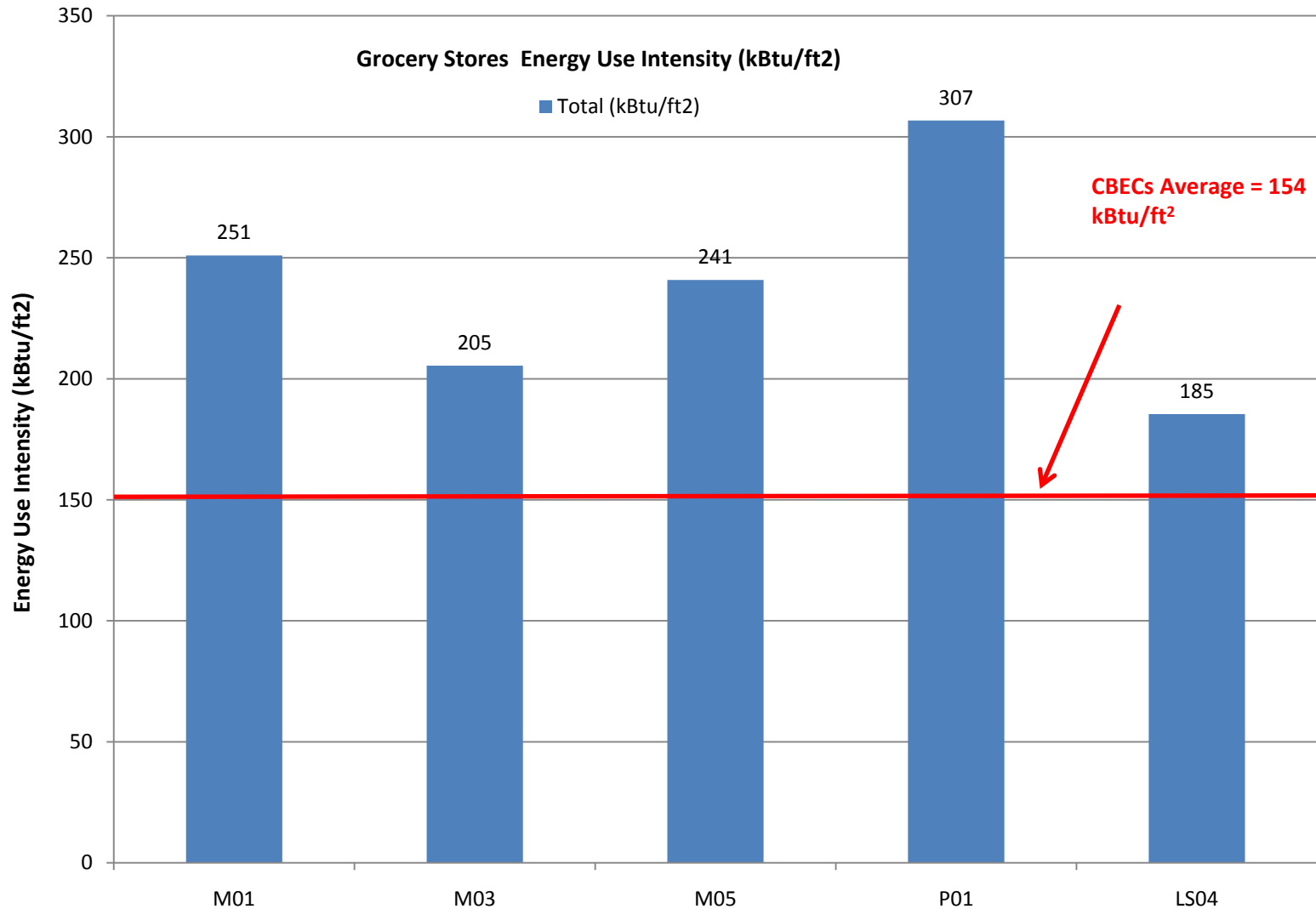


Action	Estimated Cost	Payback, yrs
Set thermostat to 78 for occupied cooling and 85 for unoccupied.	\$75	0.33
Set thermostat to 70 for occupied heating and 62 for unoccupied.		
Install lock in covers for all 3 T-stats.		
Weatherstrip exterior doors: both the one leading to the rear from the kitchen and from the storage space	\$75	1.00
Install faucet aerators	\$20	0.12
Insulate hot water lines	\$25	2.69
Replace damaged refrigerator door gaskets	\$100	3.41
Install door closers - repair or replace damaged door closers	\$150	2.05
Insulate refrigerant suction lines	\$50	0.67
Replace 5 Incandescent 60w bulbs with 13w CFL's	\$10	0.59

What We Have Seen: Restaurants



What We Have Seen: Grocery Store



Acadia Cafe: Background

Partnership since April 1999

Owners of small cafés, restaurants, and pubs in 3 different locations.

Business model has been a mix of taking over when other folks got tired

Do not want to be overleveraged...



Acadia Cafe: Competing Priorities

Competing Priorities:

- Staff, Product, Facility, Identity, Income, and Time.

Why Energy?

- low up front cost
- 3rd party help
 - Food Service Energy Leadership Program
 - City of Minneapolis
 - Center for Energy and Environment
 - Utilities
- Potential savings
- It's the right thing to do



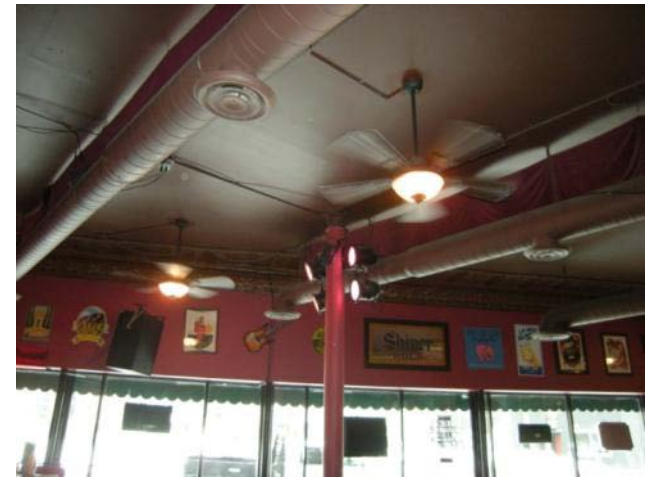
Acadia Cafe: The Energy Conservation Process

Existing best practices in place:

- Lighting audit with CEE
- Lighting Retrofits
- Using programmable thermostats
- Using ceiling fans

The Process so far:

- Fairly smooth and painless with a fair amount of hand holding.
- Cost has been mostly time and minimal dollars - so far...
- Need better written communication of step by step processes



Acadia Cafe: Next Steps and Future Hopes

Immediate next steps:

- Weatherizing (there's daylight around the closed door and significant drafts thru the walls),
- Getting working AC before summer
- Analyzing energy savings and economics for variable speed exhaust hood retrofit

Potential future investment:

- Move and retrofit kitchen exhaust hood and make up air unit to variable speed system



Eastside Food Coop: Background



Eastside Food Co-op (EFC) is a 4,400 sq. ft. natural foods grocery which opened for business in December 2003. We are located at 2551 Central Avenue NE, on one of Minneapolis' designated commercial corridors. Our emphasis is on organic foods, locally-produced and manufactured foods, and fairly-traded products.



Eastside Food Coop: Competing Priorities

Because Eastside Food Co-op is a consumer cooperative, we follow the 7 international cooperative principles, including:

- open and voluntary membership
- democratic member control
- member economic participation
- autonomy and independence
- education, training and information
- cooperation among cooperatives
- concern for community

Eastside Food Co-op's board of directors has adopted "Ends Policies" which define the reasons for the co-op's existence. There are five specific ends policies:

- Community
- Employees
- Products & Services
- Environment
- and Business



Eastside Food Coop: The Energy Conservation Process

Eastside Food Co-op has conducted:

- Energy Star audit –2008
- Xcel Online Energy Assessment – 2008
- Architectural Energy Analysis –2009
- Roof Assessment – Struck Engineering –2009
- Xcel Energy Audit – 2010
- Food Service Energy Leadership Program -2010



What we learned through these audits:

- Take time to do the audits and pay attention.
- A lot can be done in-house versus contractors.
- Some savings can be achieved by re-training and changing behaviors
- Don't put the report in a file – keep it on your desk, or set up a calendar reminder – so you can revisit it in 3-6 months and move forward.



Eastside Food Coop: Actions Taken So Far

2007 and 2008

- Xcel Super Saver program
- Installed high-efficiency HVAC unit

2009

- Insulation and resealing - walk-in freezer
- Replaced T8 32 w bulbs with 25 w bulbs.
- Replaced 75 watt bulbs with 15 watt CFLs
- Installed night shades for open refrigerated cases

2010

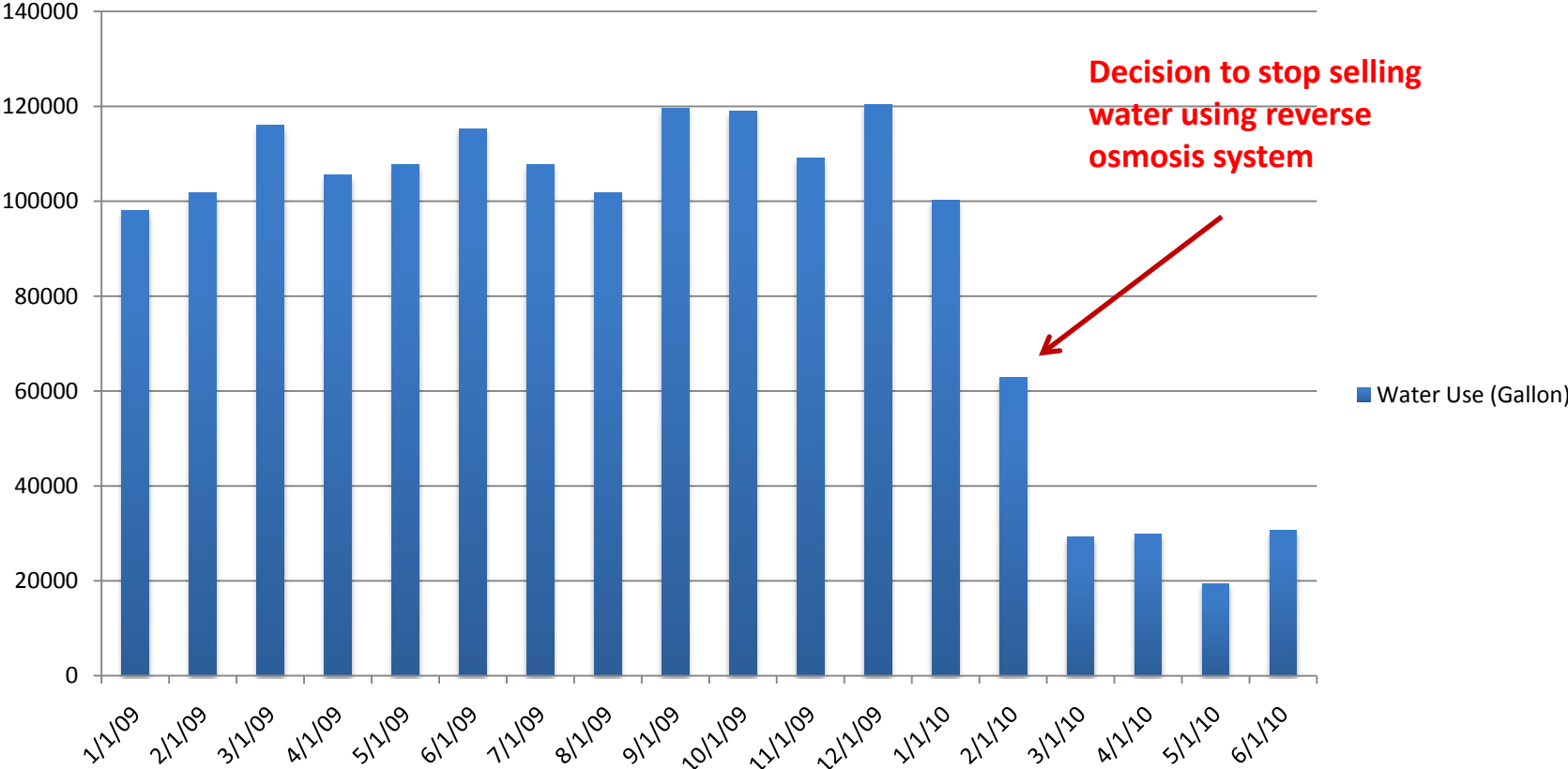
- Discontinued use of reverse osmosis system
- Installed humidistats on HVAC units
- Installed 20 kilowatt solar electric array on roof of co-op
- Started offering compact fluorescent light bulbs for \$.99
- Received free low-flow aerators for sinks

Energy as a percentage of sales dropped from 1.7% in 2006 to 1.3% in 2010



Eastside Coop: Conservation Efforts

Water Use (Gallon)



Eastside Food Coop: Next Steps and Future Hopes

In the next two years:

- Occupancy Sensors in isolated areas
- LED lighting in refrigerated cases
- Energy efficient “combi” oven in deli
- ECM motors on evaporator and condenser fans
- Insulate hot water and refrigeration lines
- Strip curtains in walk-in coolers
- Evaluate maintenance contract
- Dual flush toilets

Long-term:

- Interior wall insulation
- Insulate roof
- Install “sun tunnels” and light controls
- High-Efficiency Rooftop HVAC
- External Insulation Finishing System



Questions & Discussion

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