

June 29, 2016

**ENERGY COMMITTEE**  
**Douglas County Board of Supervisors**  
**Friday, July 15, 2016, 9:30 a.m., Room 207C, Courthouse**  
**1313 Belknap Street, Superior, Wisconsin**

Please call the Chair or the County Clerk's Office (395-1397) if you cannot attend.

MEMBERS:	Dave Sletten, Chair	David Conley, Vice Chair
	Charles Glazman	Steve Wedan
	Keith Wiley	Mark Nelson, ECE (Advisor)

**A G E N D A**  
**(Committee to maintain a two-hour meeting limit or take action  
to continue meeting beyond that time.)**

1. Roll call.
2. Approval of minutes from the March 18, 2016 meeting (attachment).
3. Action items/referrals:
  - (a) Energy resources website (attachment);
  - (b) Review ongoing energy project list (attachment);
  - (c) Hawthorne Highway Department boiler replacement (attachment);
  - (d) Lighting disposal/LED replacement (attachment); and
  - (e) Solon Springs Forestry Department addition.
4. Informational: Utility history reports (attachment).
5. Future agenda items.
6. Adjournment.

cc:	<a href="mailto:snelson@superiortelegram.com">snelson@superiortelegram.com</a>	Andy Lisak	Keith Kesler
	Candy Anderson	Tracy Ruppe	Bobbi Rongstad
	Matt Haley	Nicole Hynum	County Board Supervisors
	Russ Liupakka		

**NOTE:** Attachments to the agenda are available at the County Clerk's Office for review or copying and at the Douglas County website at [www.douglascountywi.org](http://www.douglascountywi.org). Action may be taken on any item listed on the agenda. The County of Douglas complies with the Americans with Disabilities Act of 1990. If you are in need of an accommodation to participate in the public meeting process, please contact the Douglas County Clerk's Office at (715) 395-1341 by 4:00 p.m. on the day prior to the scheduled meeting. Douglas County will attempt to accommodate any request depending on the amount of notice we receive.

Posted – Courthouse. Government Center: Daily Telegram emailed.

	06/29/2016
Name	Date

**ENERGY COMMITTEE MISSION STATEMENT**

*To make cost-effective energy efficient practices central to the County's operating policies and to promote the principles of stewardship and sustainability as an integral part of the County's decision-making process.*

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**Douglas County Board of Supervisors**  
**Friday, March 18, 2016, 9:30 a.m., Room 207C, Courthouse**  
**1313 Belknap Street, Superior, Wisconsin**

Meeting called to order by Chair Dave Sletten.

**ROLL CALL:** Present – Dave Sletten, Rosemary Lear, Steve Wedan, Keith Wiley. Absent – Dave Conley, Mark Nelson (Advisor). Others present – Russ Liupakka, Bobbi Rongstad, Cheryl Westman, Committee Clerk.

**APPROVAL OF MINUTES:** Motion by Lear, second Wiley, to approve minutes from the November 20, 2015, meeting with the following correction: under Boiler Update/Boiler Improvement Plan: should reflect two new hot water boilers. Motion carried.

**ACTION ITEMS/REFERRALS:**

**Energy Savings Fact Sheet:** Sletten advised Energy Savings Fact Sheet was emailed to Douglas County/City employees; hard copies to departments, and Focus on Energy handouts distributed. Posting information to county website will be pursued.

**Boiler Update/Boiler Improvement Plan:** Installation of boilers complete; finalizing air intake control issues; and received approximately \$28,000 from Focus on Energy rebate from boiler study and boiler incentives.

**Steam Trap Survey/Incentive:** Steam trap surveys of entire complex in progress, with maintenance staff utilizing a checklist to see how well they are working. Focus on Energy incentives available for steam trap repairs and replacement, currently every two years. Trap labeling also recommended.

**Strategies for Reducing Peak Demand:** PowerPoint on topic presented by Rongstad (included with meeting packet).

**INFORMATIONAL: Utility History Reports:** Reviewed.

**Future Agenda Items:** Highway Department office boilers replacement project; Government Center LED lighting replacements update; and review Draft Energy Plan.

**ADJOURNMENT:** Motion by Lear, second Sletten, to adjourn. Motion carried. Meeting adjourned at 10:30 a.m.

Submitted by,

Cheryl Westman, Committee Clerk



# Douglas County

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## General Services

### Responsibilities

The Buildings and Grounds Department exists to:

- Ensure a clean, well-maintained, efficient, safe, and secure environment for County operations in the Courthouse, Government Center, [Jail](#), and surrounding grounds
- Provide technical advice and counsel to [County Board](#) relating to facility and operational needs
- Assume a leadership role in the planning, design, construction administration, and management of all current or future facilities and their needs

There is a staff of seven serving two buildings, approximately 225,000 square feet of space. The Department works with the Head of the Lakes Fair Inc. with regard to the multi-acre fairgrounds complex.

### Energy Efficiency

The General Services Department strives to make energy efficiency enhancements within the Government Center, Courthouse, Jail, and surrounding grounds. The Douglas County Energy Committee works with all Douglas County own/operated facilities and assists with these energy enhancement programs. These groups work jointly with Focus on Energy to install cost-effective energy efficiency and renewable energy projects.

### Douglas County Energy Specific Information

- [Energy Saving Tips](#)
- [Heating and Cooling Guidelines](#)
- [Occupant Behavior](#)

### Energy Related Links

- [Focus on Energy](#)
- [Wisconsin State Energy Office](#)
- [Wisconsin Rebates and Programs](#)
- [Energy Star](#)

### Contact

Keith Kesler  
Director  
[Email](#)

[Email](#)[Email](#)

Courthouse Building  
1313 Belknap Street  
Room 104  
Superior, WI 54880

Ph: (715) 395-1636  
Fx: (715) 395-1421

### Hours

Monday - Friday  
8:00 am - 4:30 pm

**ENERGY COMMITTEE DRAFT ENERGY PLAN FOR DOUGLAS COUNTY**

<b><u>PROJECTS</u></b>	<b><u>ACTION</u></b>	<b><u>RESOURCES</u></b>	<b><u>TIMEFRAME</u></b>
<b><i>Buildings &amp; Grounds (Buildings account for 38% of US CO2 emissions)</i></b>			
Include Smart Growth principles into county land use and comprehensive planning process	Research Smart Growth Principles	Time	0-3 Months
Do plantings to sequester carbon	Research Planting Areas - Contact local greenhouses for donations/Do plantings	Time	0-6 Months
Use green design principles in new buildings or renovations	Call NaCo and ICLEI for guidelines	Time	0-3 Months
Install light colored roofs to reflect heat back	Call NaCo and ICLEI for information/Write a policy resolution	Time	0-6 Months
In hallways, lower or eliminate excess lights	Tour of Buildings - Contact Buildings & Grounds Department	Time	0-3 Months
Use light colored paint for dark areas	Buildings Tour	Paint & Labor	0-6 Months
Use reusable mugs, plates, etc., whenever possible/Reduce single use throwaways	For offices-Do a walk through/See what is being thrown away/Develop a list of best practices/Do recycling education/Make sure boxes are available and easy to access./Water use-Monitor bills and develop best practices for water conservation list	Time	0-6 Months
	Check for what is being used/Move to reusables	Donations of mugs and other	0-3 Months
Abide by Styrofoam resolution	Check into existing Styrofoam resolution and find out if it is being followed/Communication to personnel on ordinance	Time	0-3 Months
24-hour lighting energy efficiency projects			
<b><i>Conservation</i></b>			
Develop policies and programs to protect land and water resources by preserving open space, critical habitat, and farmlands/Restore and protect wetlands, create buffers around water bodies and limit impervious surfaces	Check with Land Conservation Committee on how it interacts with energy and CO2 savings	Time	0-3 Months
Encourage brown field and redevelopment projects	Research current policies and make recommendations	Time	0-3 Months
<b><i>Energy</i></b>			
Conservation!!! Get ideas from staff - suggestion boxes	Research energy conservation numbers/Send to personnel/Meet with/post or send email memo to gather additional conservation ideas from personnel	Time	0-6 Months
Use Energy Star appliances	Do research NaCo./Draft resolution for purchasing	Time	0-3 Months
Consolidate use of electronics and small appliances	Take building tour/Develop recommendations	Time/Possible costs tbd	0-6 Months
Computer use: Log off and shut down/An average computer left on emits 2000 lbs of CO2/year compared with 500 lbs for computers that are turned off when not in use	Gather and distribute energy information to personnel/Develop reminder posters/Do walk throughs for compliance	Time/Paper for posters	0-6 Months

**ENERGY COMMITTEE DRAFT ENERGY PLAN FOR DOUGLAS COUNTY**

<b><u>PROJECTS</u></b>	<b><u>ACTION</u></b>	<b><u>RESOURCES</u></b>	<b><u>TIMEFRAME</u></b>
Install motion/heat sensors in hallways, bathrooms and workrooms	Walk throughs/See what's there/Develop a list of recommendations	Time/Money for recommendations	0-6 Months
Turn down thermostats two degrees in winter and up two degrees in summer	Determine present heating and cooling temperatures/Talk to management about temperature adjustments/ Encourage lighter summer wear and warmer winter wear	Time	0-6 Months
Look for ways to incorporate renewable energy such as wind generators (St. Louis County) and solar panels/Check on rebates from power companies, state or federal governments	Research power company, state and federal rebates/Develop recommendations for the future	Time/Monetary costs tbd	0-12 Months
Highway Dept. lighting updates/sign shop water heater	Research potential for water heater replacement in sign shop; and LED lighting at fuel islands and other exterior lighting	Time/Money for recommendations	
Courthouse/Government Center: Heating and Cooling Guidelines			
<b><i>Transportation (33% of USA CO2 emissions)</i></b>			
Monitor county vehicle use	Develop a system to monitor county vehicle use to see what patterns exist and what changes might be made	Time	0-12 Months
Phase in hybrids/electric/gas/propane efficient cars/Research synthetic lubricants & alternative fuels	Make recommendations based on monitoring and research results above	Time/Possible monetary expenditures	0-12 Months
Encourage people to walk or bike	Gather and disperse information on energy savings and health benefits to personnel/"Save Energy and Save Your Health" bike or walk contest/Have personnel keep track of hours biked or walked to work during August/Prizes donated by local merchants/News coverage out in community	Time, news coverage, items donated	0-6 Months
Install bike racks outside of county work places	Check number of bike rack spaces available	Time/Purchase more racks if needed	0-6 Months
Encourage walkable and bikable towns and cities	Contact MIC for recommendations for Douglas County	Time	0-6 Months
Bike to Work Day	Discuss a possible county-wide day to encourage biking or walking to work day	Time	0-12 Months
Encourage use of public transit	Contact DTA for ideas/Make sure bus schedules and the DTA phone number are widely available/Research current schedule locations and determine whether more are needed	Time	0-6 Months
Publicize the existing and increase county public transportation options	Research what is available and publicize it/Determine whether there is a need for more options through surveys	Time/Possible survey expenses	0-6 Months
Ride boards/carpools/ride share gathering places	Develop a way to post ride and carpool needs for personnel online/Identify areas to serve as Park and Ride locations	Time	0-12 Months
<b><i>Education</i></b>			
Brochure on how residents can reduce CO2	Put together and distribute handouts for community residents on energy and CO2 savings ideas	Time and printing costs	0-6 Months
SWL&P/Dahlberg, etc. - inserts on reducing CO2 in bills	Talk to local power companies about putting handout in bills	Time.	0-6 Months

**ENERGY COMMITTEE DRAFT ENERGY PLAN FOR DOUGLAS COUNTY**

<b><u>PROJECTS</u></b>	<b><u>ACTION</u></b>	<b><u>RESOURCES</u></b>	<b><u>TIMEFRAME</u></b>
County fact sheets with CO2 reduction ideas	Create or borrow county energy reduction fact sheet for personnel/Check with NaCo for prototype	Time and copying costs	0-6 Months
Recycling-bins and information available to all	Check for widespread availability of personal recycling containers	Time/Possible purchase of containers	0-6 Months
Public meetings with information on how to recycle/reduce CO2 emissions	Determine if county wide informational meetings are needed/If so, find speakers and venues/Investigate an informational series in local publications as an alternative to meetings	Time	0-9 Months
Publicize Douglas County's weatherization program	Publicize weatherization program through PSAs, town and village meetings and local news sources	Time	0-6 Months
Bring "Paradise Lost?" exhibit to Superior	Bring "Paradise Lost" exhibit to Superior	Cost of exhibit	0-9 Months
Join Cool Counties and share information with supervisors and public	Investigate joining Cool Counties	Time	0-3 Months
<b><u>Procurement</u></b>			
Purchase recycled paper and other office supplies (at least 30% post consumer)	Investigate current status of recycled content in paper and office supplies/Check with NaCo and St. Louis County on what is being done and what is available	Time/Possible costs in purchasing	0-6 Months
Purchase locally as much as possible	Determine local options/sources and develop a local procurement policy	Time	0-12 Months
Purchase from companies who are energy efficient in their practices	Request sustainability plans from current and prospective vendors.	Time	0-12 Months
<b><u>Highways</u></b>			
Look into paving with porous or lighter colored materials.	Compile information on paving surfaces and heat	Time	0-6 Months

# Replace Existing Boilers

This Best Practice looks at the savings associated with replacing an old boiler with a more efficient unit.

## EXISTING

Existing Boiler Efficiency	82%	Bank of Slant Fin boilers; 82% when new -- less now
Average Existing th/yr	40,649	
Average therm Rate	\$0.756	
Annual Energy Cost	\$30,739	



## PROPOSED

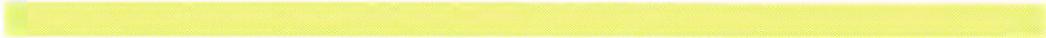
Proposed Efficiency	90.0%
Proposed Therm Use:	37,036
Annual Energy Cost	\$28,007

## SAVINGS

th/yr	3,613
Annual Cost Savings	\$2,732
Project cost Estimate	
Incentive	Incentive is \$3 per MBH; I don't have the size of the units.
Simple Payback	Immediate

This calc is for the **highway shop**. I found the info on the boilers in an audit I completed in 2007. This is conservative since the efficiency may be degraded slightly since then.

Bobbi



# LED Lighting Douglas County

## Currently we are using:

- 26 watt compact 4 pin lamps
- 7 watt compact 2 pin lamps
- 31 watt "u-tube" lamp
- 40 watt 2' straight tube
- 28 watt 4' straight tube (t-8)

I see the [1000bulbs.com](http://www.1000bulbs.com) has each style of the above in LED. Wondering what the incentives for each would be. With the replacement, to qualify for the incentive does the ballast need to be bypassed, or can the incentive be obtained utilizing the existing ballast? (our choice would to bypass all the ballast, but thought we would as the question). Just doing some research on incentives so we know what our possibilities may be for the next year.

## LED replacement

-26 watt compact replaced with LED These were the two 26 watt lamp fixtures (52 watt total) replaced with 23 watt LED last year. Believe the incentive was \$30 per bulb....is that still the going rate?

-7 watt compact 2 pin replaced with 3.5 watt LED similar to

<https://www.1000bulbs.com/product/172661/GREENCREATIVE-57814.html>

-31 watt "u tube" replaced with 16 watt LED similar

to <https://www.1000bulbs.com/product/152711/GREENCREATIVE-40849.html>

-40 watt 2' straight tube CFL replaced with 17 watt LED similar to

<https://www.1000bulbs.com/category/4-pin-pl-retrofit-led-40-watt-equal/>

-28 watt 4' T8 with 12 watt LED similar to

<https://www.1000bulbs.com/product/172685/GREENCREATIVE-97740.html>

Following Spreadsheet uses the above figures in the existing and proposed calculations.

# Replace various with LED

## EXISTING

	Area 1	Area 2	Area 3	Area 4	Area 5
Lighting Type	<i>cfl fixture</i>	<i>cfl fixture</i>	<i>fl u-bend</i>	<i>fl 2'</i>	<i>fl 4'</i>
Location	<i>Office</i>	<i>Office</i>	<i>Office</i>	<i>Office</i>	<i>Office</i>
Number of Fixtures	1	1	1	1	1
Lamps per Fixture	2	1	1	1	1
Fixture Wattage	52	7	31	40	28
LF - Load Factor	1	1	1	1	1
<b>Annual Operating Hours</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>
Conversion Factor	1,000	1,000	1,000	1,000	1,000
<b>kW</b>	<b>0.05</b>	<b>0.01</b>	<b>0.03</b>	<b>0.04</b>	<b>0.03</b>
<b>kWh/Yr Use</b>	<b>150</b>	<b>30</b>	<b>90</b>	<b>120</b>	<b>90</b>
Average kWh Rate	\$0.080	\$0.080	\$0.080	\$0.080	\$0.080
<b>Annual Energy Cost</b>	<b>\$12.00</b>	<b>\$2.00</b>	<b>\$7.00</b>	<b>\$10.00</b>	<b>\$7.00</b>

## PROPOSED

	CFL	CFL	CFL	CFL	CFL
Lighting Type	CFL	CFL	CFL	CFL	CFL
Number of Fixtures	1	1	1	1	1
Lamps per Fixture	2	1	1	1	1
Fixture Wattage	23.0	3.5	16.0	17.0	17.0
% Useful Heat:	50%	50%	50%	50%	50%
Conversion Factor	1,000	1,000	1,000	1,000	1,000
<b>kW</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>
<b>kWh/Yr Use</b>	<b>60</b>	<b>0</b>	<b>60</b>	<b>60</b>	<b>60</b>
<b>Annual Energy Cost</b>	<b>\$ 4.80</b>	<b>\$ -</b>	<b>\$ 4.80</b>	<b>\$ 4.80</b>	<b>\$ 4.80</b>

## SAVINGS

<b>kW</b>	<b>0.03</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.01</b>
<b>kWh/Yr Use</b>	<b>90</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>30</b>
<b>Annual Energy Cost</b>	<b>\$ 7.20</b>	<b>\$ 2.40</b>	<b>\$ 2.40</b>	<b>\$ 4.80</b>	<b>\$ 2.40</b>
<b>Project cost Estimate</b>	<b>\$50</b>	<b>\$12</b>	<b>\$21</b>	<b>\$23</b>	<b>\$14</b>
<b>Incentive</b>	<b>\$ 5.70</b>	<b>\$ 1.90</b>	<b>\$ 3.00</b>	<b>\$ 3.80</b>	<b>\$ 3.00</b>
<b>Simple Payback</b>	<b>6.2</b>	<b>4.1</b>	<b>7.5</b>	<b>4.0</b>	<b>4.6</b>

have to be  
DLC listed  
your choice  
was not

have to be  
DLC listed  
your choice  
was not

# CERTIFICATE OF RECYCLING / DISPOSAL

Lamp Recyclers, Inc. certifies that all waste materials accepted are recycled or disposed of in accordance with all applicable federal, state and local regulations. EPA ID: WIR000125831

Pickup Date: 4/26/2016

Invoice Number:

## MATERIALS RECEIVED

Quantity	Description
1,738	4' & Under Florescent Lamps - Each
780	Fluorescent Compacts - Each
50	HID (All types) - Each
127	Ballasts (Non-PCB) - Per lb.
	Sales Tax

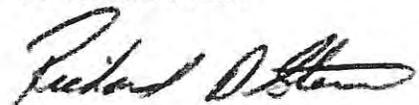
### Certificate issued to:

DOUGLAS CO GOV CENTER  
ACCOUNTS PAYABLE  
1316 N 14TH STREET  
SUPERIOR, WI 54880

### Materials owned by:

DOUGLAS CTY GOVT CENTER  
CUMMING AVE  
SUPERIOR, WI 54880

On Behalf of LRI



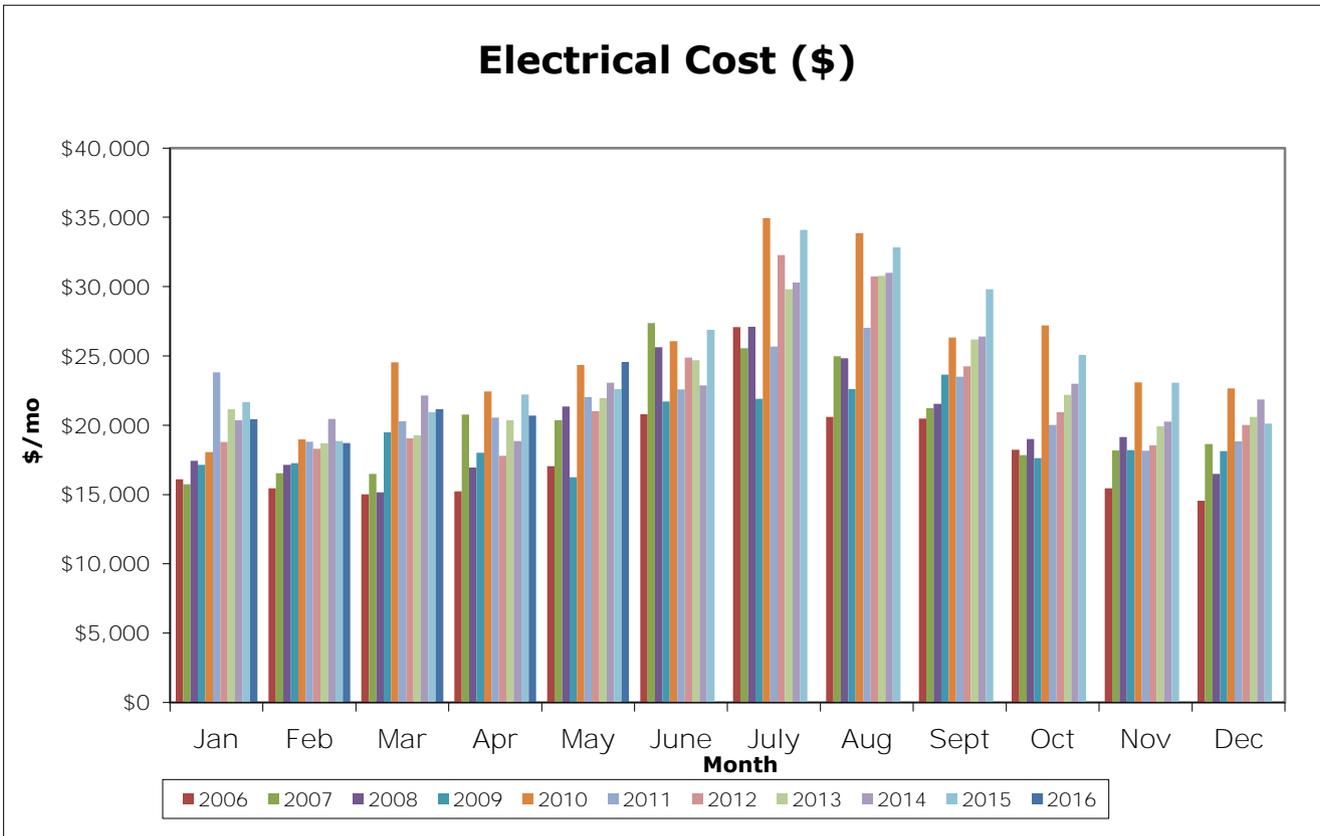
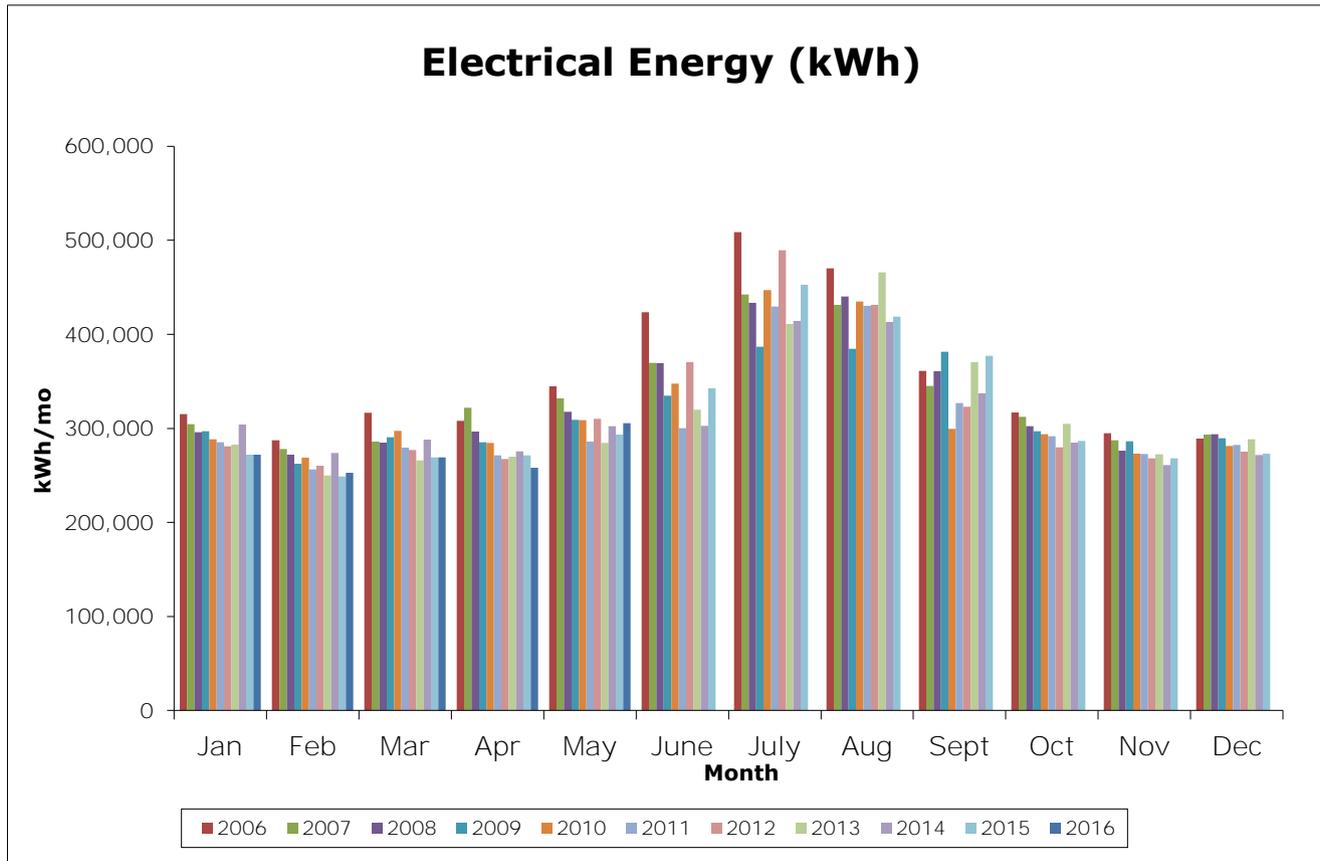
Rich Stern

Vice President of Operations

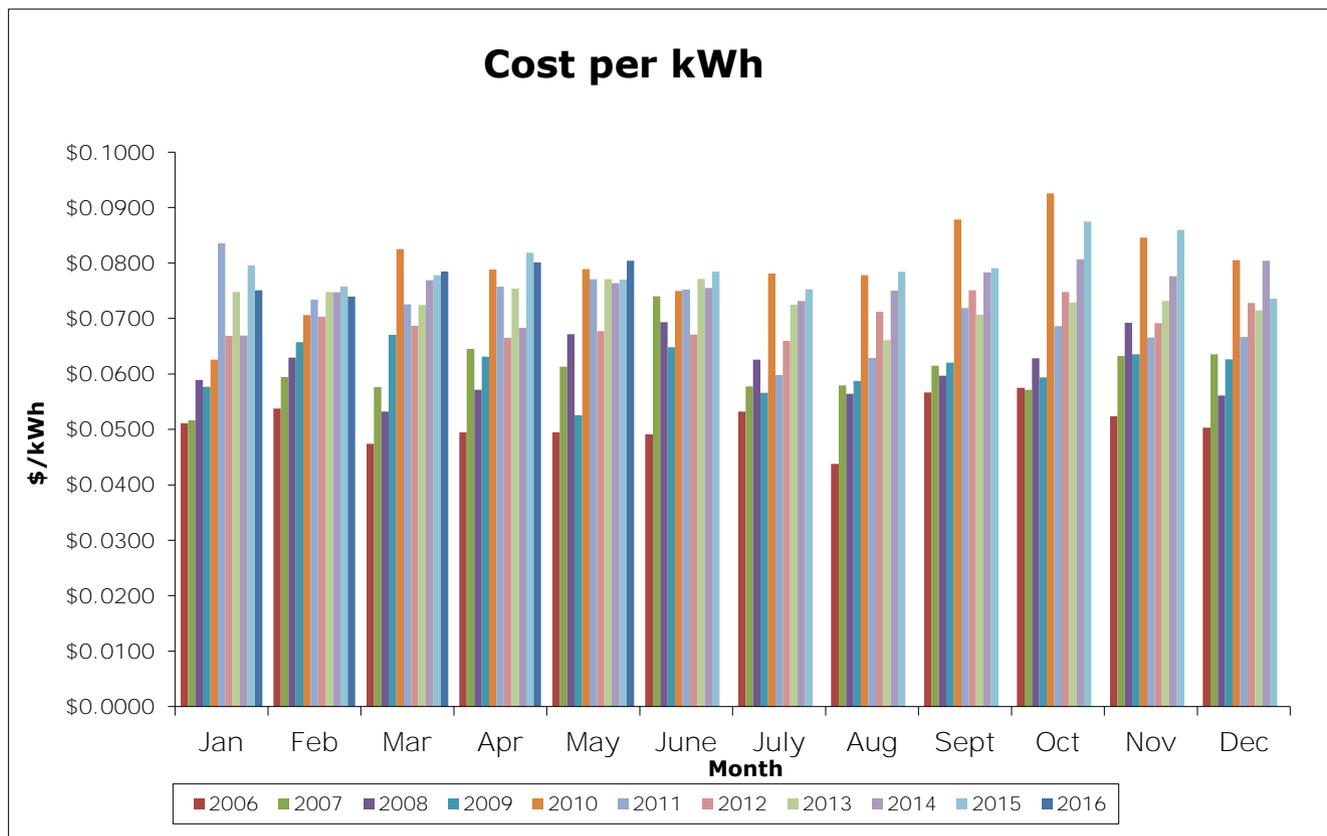
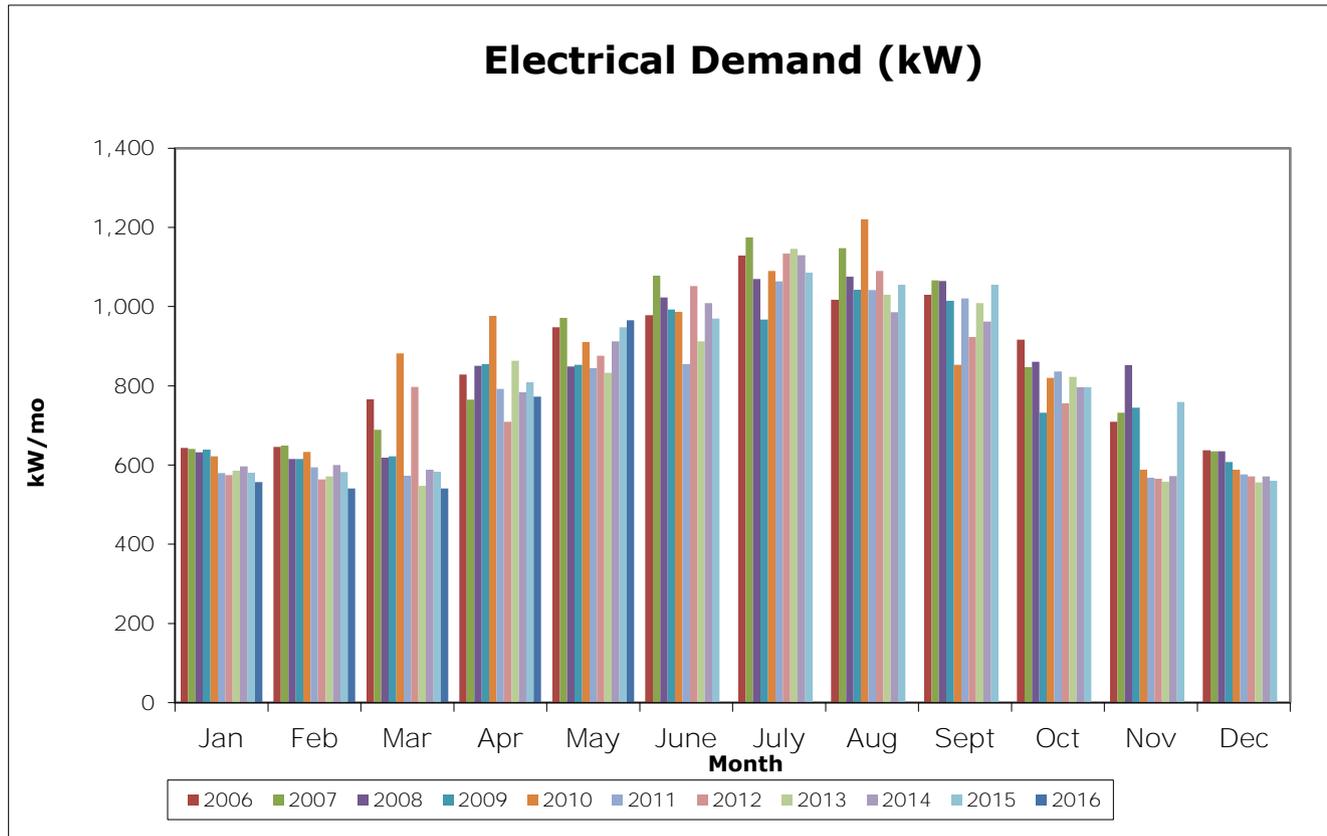


Lamp Recyclers, Inc. 3055 Holmgren Way Green Bay, WI 54304

## Douglas County Government Center and Courthouse

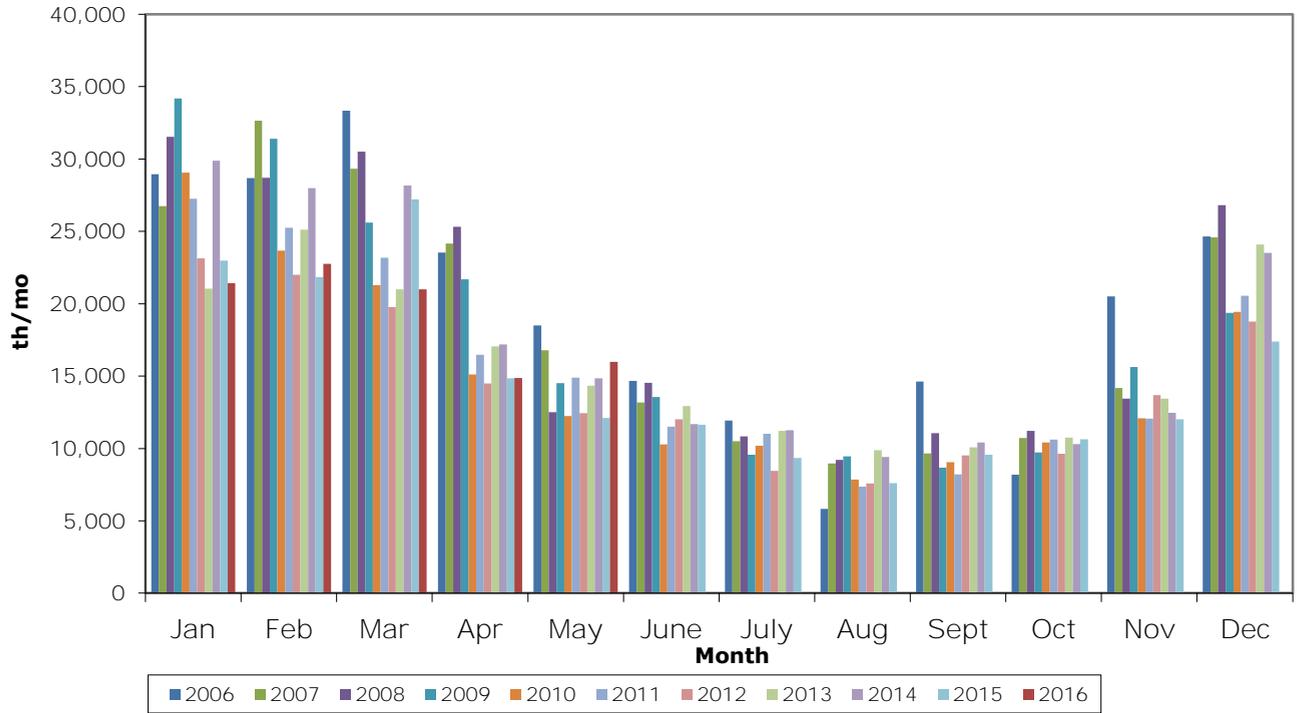


## Douglas County Government Center and Courthouse



Douglas County Government Center and Courthouse Interruptible

Gas Energy (Therms)



Gas Cost (\$)

