



# Madison Metropolitan School District

July 2012 to June 2013

Year Three, Year End Summary Report

Aug 22, 2013

FOR THE  
LIFE OF  
YOUR  
BUILDING

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# Executive Summary

McKinstry is excited to deliver the Energy Management Services (EMS) Year Three Year End Report for the Madison Metropolitan School District. The contents of this report were established using Metrix software which was used to tune all related gas and electric meters to the established 2009 base year. The Metrix data was then entered into McKinstry's EEM Suite and compares the 2009 baseline energy usage with the actual energy usage over the past months of July 2012 through June 2013. Using current weather and occupancy data, the meters adjust the baseline usage to current conditions giving an accurate expected consumption to compare to the current actual usage. Additionally, the usage is prorated to the month to get a more valid comparison across a district with utility meters that are read on a variety of different dates.

The objective of this report is to determine the impact of the utility savings measures made at the District and clarify the scope and direction needed to ensure further progress is made. Thus the report is focused first on the schools and buildings which appear to be using the most energy, and which sites are showing the most variance from the usage level predicted by their baseline. Determining the sites that are the most energy inefficient will continue to lead to actions needed to move lower performing schools forward.

While we are primarily concerned with decreasing the energy usage within the district, cost avoidance data is also presented as part of this report. The costs should help to quantify the scope of actions taken and give some idea as to the importance of changes made. Because weatherized data is used to predict expected energy usage and because of the much warmer than base year weather we have been having this year, the energy savings shown in this report show a higher than normal electric savings due to cooling and a lower than normal gas savings due to less heating required.

Please see the following pages for the energy usage analysis and feel free to contact Glenn Bolt from the McKinstry Company at (608) 216-2124 with any questions or concerns.

Best Regards,

Glenn Bolt

Project Director

*McKinstry Company*



# MMSD Year Three Energy Report



## Program Overview

The McKinstry powerED program is a behavior-focused energy awareness and operational efficiency program designed to reduce costs, increase efficiency, and promote environmentally friendly operations within your facilities. Our systematic energy and environmental management program encourages active participation from staff, careful tracking of resources, and attention to efficient operations. Our goal is to work with you to educate building occupants about the importance of energy efficiency and associated climate impacts in order to affect behavioral modifications that save energy and money. Initiatives to date have been focused on operational issues which fall under the process segment of powerED, such as reduced equipment runtimes, temperature setpoint standardization and whole building high level audits. A few of the elements of the process side are bulleted below:

- Collaborating with building operators*
- Investigate systems and operational characteristics*
- Identify low- and no-cost savings opportunities*
- Provide best practice recommendations*
- Provide continual monitoring and feedback*
- Implement an energy policy and sustainable building guidelines*

The people portion of powerED is has now finished its second year where we put more emphasis on the behavioural aspects of our program. Identifying and working with site champions, staff, principals and teachers, and most importantly students to increase energy awareness and engage the student population in education and activities related to energy in their school and beyond.

The performance side of powerED is what the contents of this report are all about; Measurement and verification of energy use, energy savings, and the cost avoided associated with these energy savings. The data immediately below represents district wide energy savings information, and the following pages will get into more detailed information for individual district facilities.

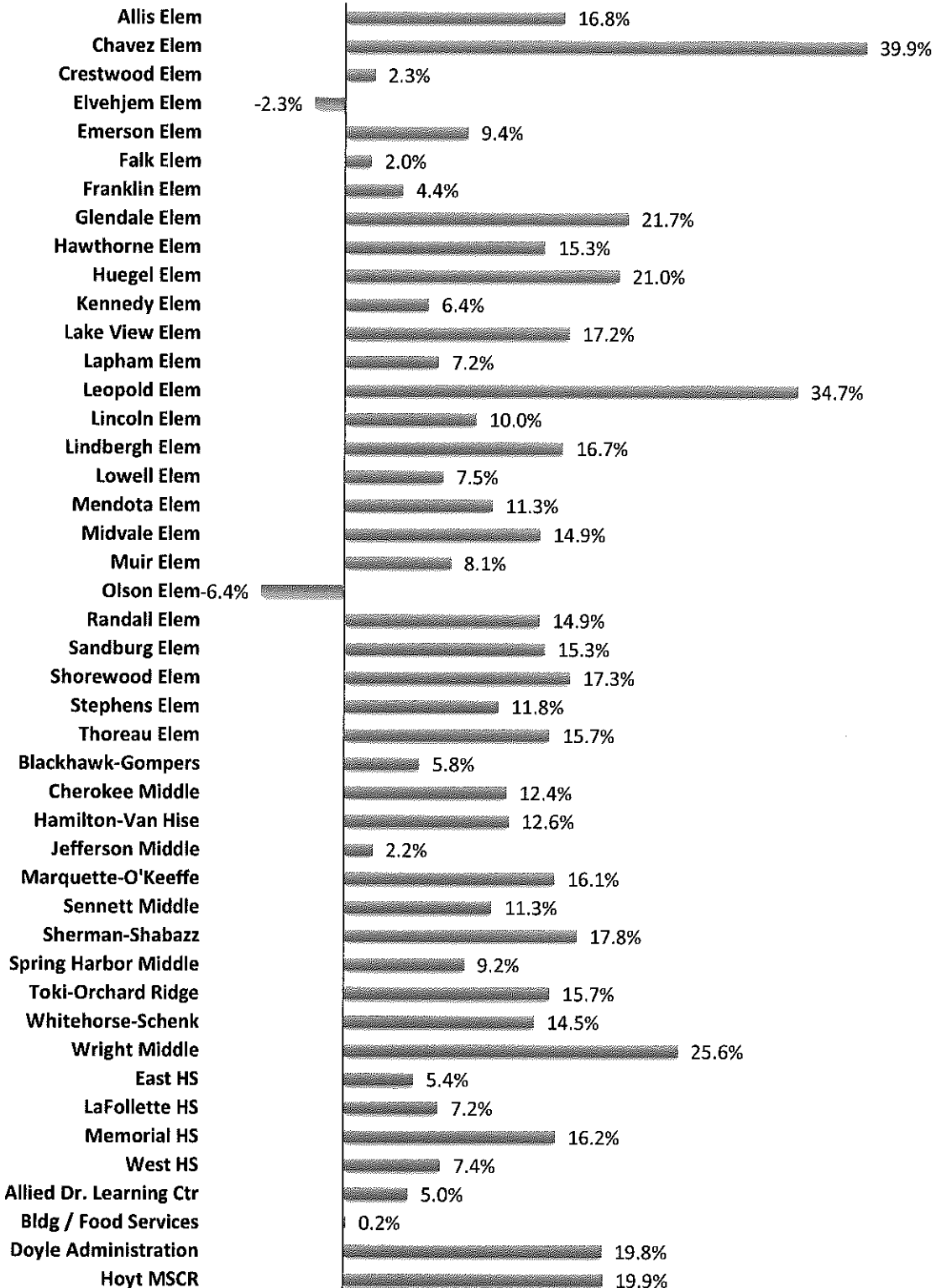
## District Facilities Energy Use Year Three

District Wide Energy Use			Data for July '12 - Jun. '13	
<b>*YTD Gas Baseline (Therms)</b>	<b>*YTD Gas Actual (Therms)</b>	<b>*YTD Gas Saved (Therms)</b>	<b>*YTD % Gas Saved</b>	<b>*YTD Gas Cost Avoided</b>
2,874,337	2,512,789	361,548	12.6%	\$271,767
<b>*YTD Electric Baseline (kWh)</b>	<b>*YTD Electric Actual (kWh)</b>	<b>*YTD Electric Saved (kWh)</b>	<b>*YTD % Electric Saved</b>	<b>*YTD Electric Cost Avoided</b>
26,358,649	23,761,579	2,597,071	9.9%	\$340,220
<b>*YTD Total Energy Baseline (kBTU)</b>	<b>*YTD Total Energy Actual (kBTU)</b>	<b>*YTD Total Energy Saved (kBTU)</b>	<b>*YTD % Total Energy Saved</b>	<b>*YTD Total Energy Cost Avoided</b>
377,369,423	332,353,406	45,016,017	11.9%	\$611,987

# District Facilities Energy Use Year Three



## \*Year to Date % Improvement of Total Energy



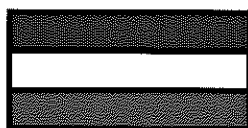
# Heating and Cooling Degree Day Information



HDD = Htg Deg Days CDD=Clg Deg Days Data Balance Pt=62		Base Year 2009	Current Year 2012	Current Year 2013	Current Year vs. Base Year - Degree Day Difference
July	HDD	8	0		-8
	CDD	129	556		427
August	HDD	22	2		-20
	CDD	212	281		69
September	HDD	52	135		83
	CDD	69	102		33
October	HDD	504	413		-91
	CDD	0	6		6
November	HDD	587	710		123
	CDD	0	0		0
December	HDD	1,225	987		-238
	CDD	0	0		0
January	HDD	1,589		1,246	-343
	CDD	0		0	0
February	HDD	1,069		1,140	71
	CDD	0		0	0
March	HDD	825		1,089	264
	CDD	0		0	0
April	HDD	480		557	77
	CDD	1		11	10
May	HDD	133		161	28
	CDD	32		83	51
June	HDD	32		27	-5
	CDD	189		202	13

Cooling Degree Days (CDD) are roughly proportional to the energy used for cooling a building, while Heating Degree Days, (HDD) are roughly proportional to the energy used for heating a building. Degree Days, although simply calculated, are quite useful in energy calculations. They are calculated for each day, and then are summed over some period of each month. In general, daily degree days are the difference between the building's balance point and the average outside temperature.

Degree days are then used in analyzing what the expected weather would be given an increase or decrease in degree days from the base year. This is used to perform a more accurate representation of energy savings.



**Much warmer this year compared to the base year**  
**About the same this year compared to the base year**  
**Much cooler this year compared to the base year**

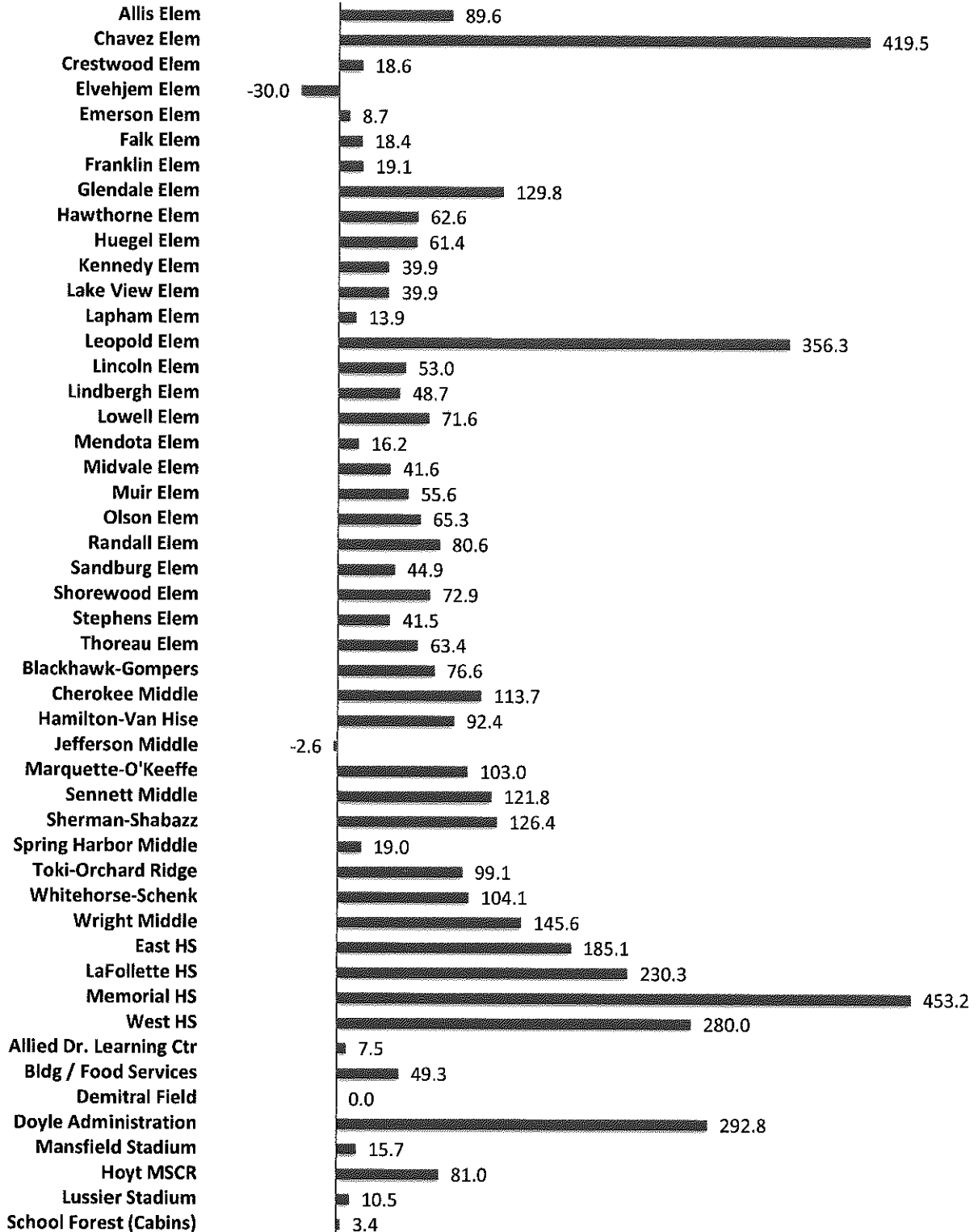
*\*Much warmer or cooler based on 10% difference from base year with a minimum of 50 degree days.*

*(Much warmer could mean fewer HDD in winter (heating) months, or more CDD in summer (cooling) months.)*

# District Facilities Energy Use Comparison



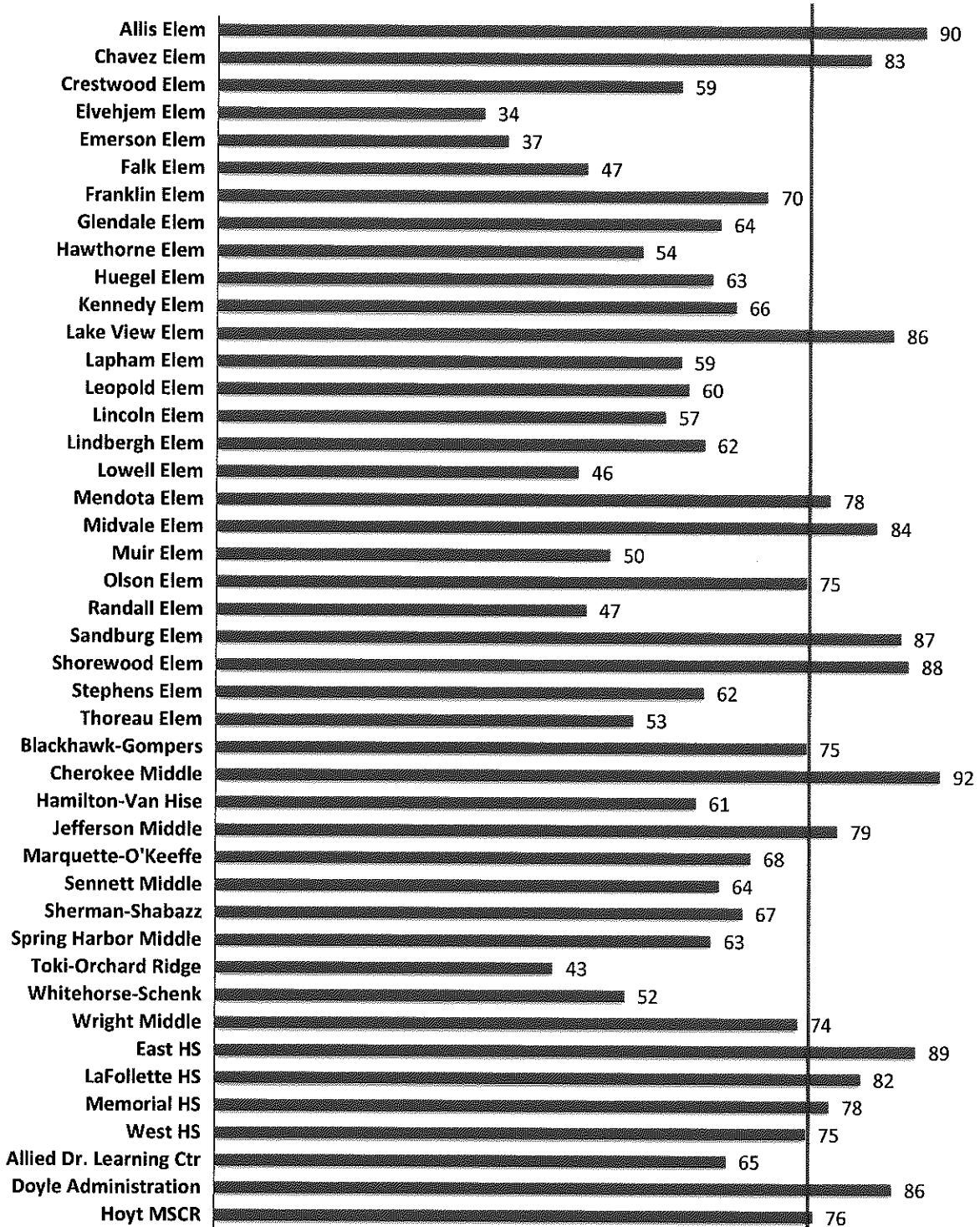
## Tons of Carbon Saved



# District Facilities Energy Use Comparison



## Current Energy Star Rating



The value required for achieving an Energy Star rating is "75", and is represented by the red line.

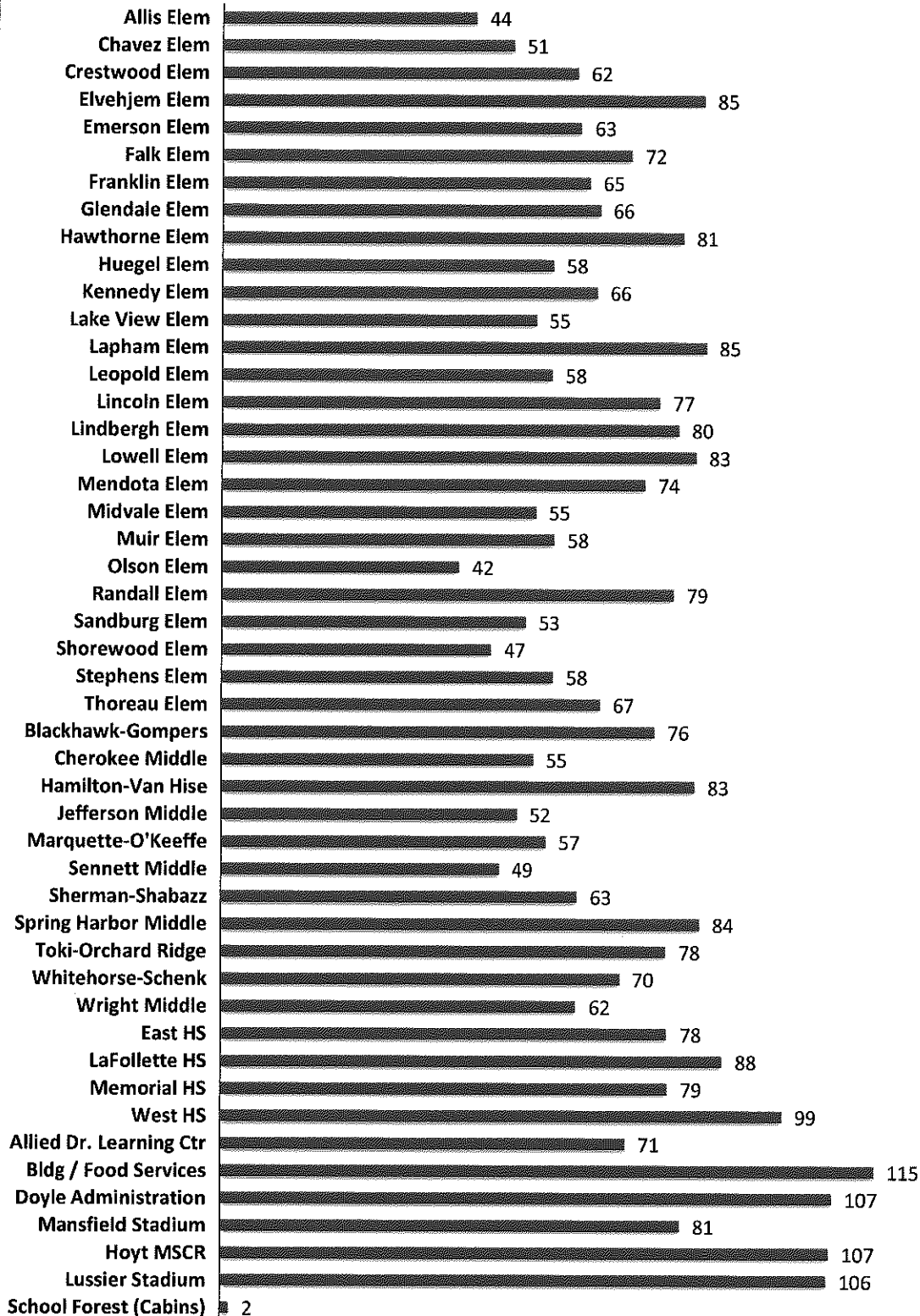
The data above is still being finalized for a handful of facilities, future reports will update as data is corrected.



# District Facilities Energy Use Comparison



**\*YTD kBTU / SqFt**



# Elementary Schools Energy Use Fiscal YTD



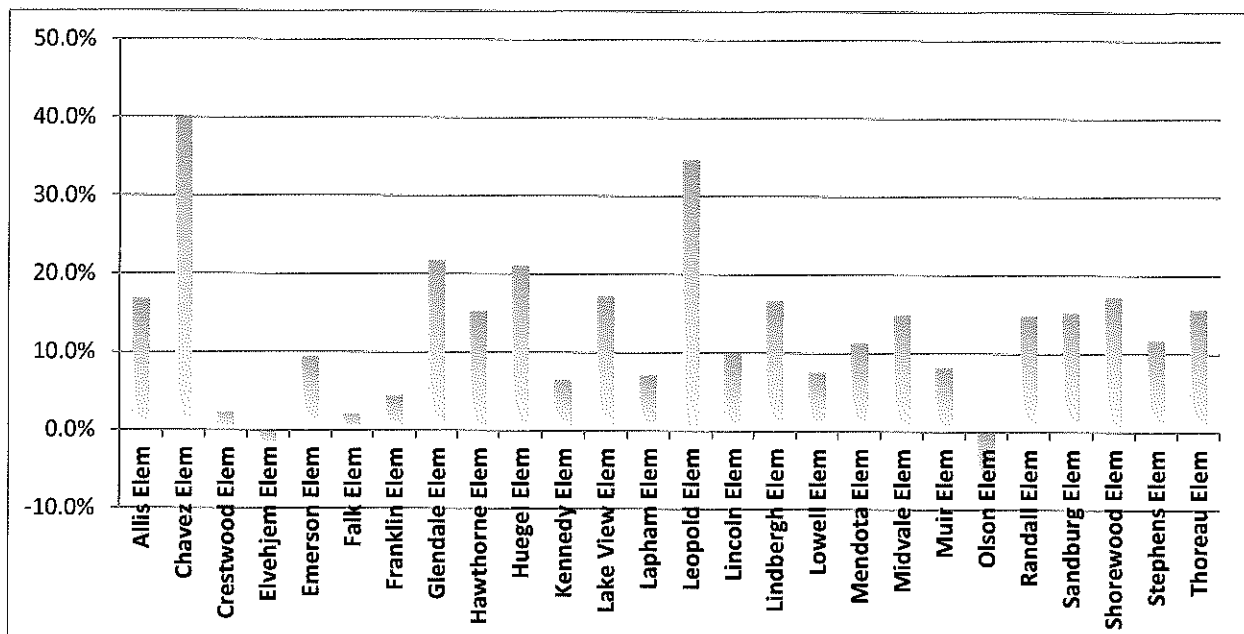
## Elementary School Energy Use

Data for July '12 - Jun. '13

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
949,480	813,550	135,930	14.3%	\$114,177
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
9,281,066	8,080,132	1,200,934	12.9%	\$157,321
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
126,614,976	108,924,374	17,690,603	14.0%	\$271,498

- \* In general, the Elementary Schools account for about 44% of district savings. Some of the facilities on the lower end will be next on the audit list.
- \* While Leopold and Chavez continue to lead most facilities from a percent improvement as compared to the base year use of 2009, Glendale and Huegel have now stepped it up. Great job, well done.
- \* Falk, Franklin and Crestwood have slight positive savings. Olson and Elvehjem have slipped and will need attention going forward.
- \* In general, all but two facilities are showing positive improvement, and overall the best we have seen since the program began.

The data immediately above represents energy savings information for just the elementary schools, and the following pages will get into more detailed information for each individual elementary school. The chart below shows performance based on % energy saved.



# Elementary Schools Energy Use Fiscal YTD



## Allis Elementary District Rank = 11

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
31,258	26,119	5,139	16.4%	\$4,525

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
368,469	303,914	64,555	17.5%	\$9,143

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,383,018	3,648,854	734,164	16.8%	\$13,668

## Chavez Elementary District Rank = 1

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
42,986	24,682	18,304	42.6%	\$13,916

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
934,353	595,652	338,700	36.2%	\$40,585

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
7,486,568	4,500,565	2,986,003	39.9%	\$54,501

## Crestwood Elementary District Rank = 40

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
34,210	33,828	382	1.1%	\$490

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
265,467	247,696	17,771	6.7%	\$2,316

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,326,768	4,227,938	98,830	2.3%	\$2,806

# Elementary Schools Energy Use Fiscal YTD



## Elvehjem Elementary District Rank = 44

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
48,591	48,945	-354	-0.7%	\$84

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
329,703	359,980	-30,277	-9.2%	-\$3,644

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
5,984,000	6,122,752	-138,752	-2.3%	-\$3,560

## Emerson Elementary District Rank = 28

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
40,723	35,237	5,486	13.5%	\$4,653

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
247,509	272,904	-25,395	-10.3%	-\$3,157

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,916,840	4,454,848	461,992	9.4%	\$1,496

## Falk Elementary District Rank = 42

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
37,569	37,182	387	1.0%	\$612

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
333,215	315,734	17,481	5.2%	\$2,276

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,893,839	4,795,485	98,354	2.0%	\$2,888

# Elementary Schools Energy Use Fiscal YTD



## Franklin Elementary District Rank = 39

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
26,801	25,718	1,083	4.0%	\$1,013

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
240,381	226,492	13,889	5.8%	\$1,868

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
3,500,256	3,344,554	155,702	4.4%	\$2,881

## Glendale Elementary District Rank = 4

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
54,399	41,966	12,433	22.9%	\$10,851

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
367,950	306,092	61,859	16.8%	\$8,292

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
6,695,360	5,240,985	1,454,375	21.7%	\$19,143

## Hawthorne Elementary District Rank = 18

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
42,129	34,984	7,145	17.0%	\$6,269

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
282,904	260,369	22,535	8.0%	\$2,990

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
5,178,175	4,386,778	791,398	15.3%	\$9,260

# Elementary Schools Energy Use Fiscal YTD



Huegel Elementary			District Rank = 5	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
37,595	27,824	9,771	26.0%	\$8,174
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
282,132	277,550	4,582	1.6%	\$463
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,722,109	3,729,399	992,709	21.0%	\$8,636
Kennedy Elementary			District Rank = 35	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
37,017	35,021	1,996	5.4%	\$1,583
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
302,663	272,036	30,627	10.1%	\$4,173
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,734,343	4,430,288	304,055	6.4%	\$5,756
Lake View Elementary			District Rank = 10	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
21,143	17,119	4,024	19.0%	\$3,200
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
171,408	153,674	17,734	10.3%	\$2,533
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
2,699,171	2,236,236	462,935	17.2%	\$5,733

# Elementary Schools Energy Use Fiscal YTD



Lapham Elementary			District Rank = 34	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
57,009	51,465	5,544	9.7%	\$4,773
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
312,354	332,448	-20,094	-6.4%	-\$2,789
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
6,766,660	6,280,814	485,846	7.2%	\$1,984
Leopold Elementary			District Rank = 2	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
57,605	37,746	19,859	34.5%	\$14,517
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
741,810	481,496	260,314	35.1%	\$35,911
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
8,291,587	5,417,464	2,874,123	34.7%	\$50,428
Lincoln Elementary			District Rank = 27	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
39,198	35,238	3,960	10.1%	\$3,631
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
328,025	295,692	32,333	9.9%	\$4,583
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
5,039,008	4,532,701	506,307	10.0%	\$8,214

# Elementary Schools Energy Use Fiscal YTD



## Lindbergh Elementary District Rank = 12

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
26,864	22,079	4,785	17.8%	\$4,339

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
187,291	164,883	22,409	12.0%	\$3,401

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
3,325,437	2,770,457	554,980	16.7%	\$7,739

## Lowell Elementary District Rank = 31

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
49,952	47,353	2,599	5.2%	\$2,562

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
357,451	296,287	61,164	17.1%	\$9,246

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
6,214,825	5,746,206	468,620	7.5%	\$11,808

## Mendota Elementary District Rank = 25

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
35,247	30,026	5,221	14.8%	\$3,948

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
183,020	198,564	-15,544	-8.5%	-\$2,155

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,149,181	3,680,101	469,080	11.3%	\$1,793



# Elementary Schools Energy Use Fiscal YTD



## Midvale Elementary District Rank = 19

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
33,868	27,778	6,090	18.0%	\$4,850

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
244,307	237,884	6,424	2.6%	\$749

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,220,338	3,589,459	630,879	14.9%	\$5,598

## Muir Elementary District Rank = 30

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
29,210	27,272	1,938	6.6%	\$1,421

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
431,369	383,384	47,985	11.1%	\$5,893

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,392,799	4,035,306	357,493	8.1%	\$7,314

## Olson Elementary District Rank = 45

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
2,498	8,324	-5,826	-233.2%	-\$4,121

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
918,168	810,428	107,740	11.7%	\$12,443

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
3,382,574	3,597,579	-215,005	-6.4%	\$8,321

# Elementary Schools Energy Use Fiscal YTD



## Randall Elementary District Rank = 20

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
48,247	41,119	7,128	14.8%	\$6,002

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
270,911	228,694	42,217	15.6%	\$5,334

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
5,749,029	4,892,203	856,826	14.9%	\$11,336

## Sandburg Elementary District Rank = 17

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
19,067	15,905	3,162	16.6%	\$2,616

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
233,757	205,111	28,647	12.3%	\$4,188

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
2,704,236	2,290,311	413,926	15.3%	\$6,804

## Shorewood Elementary District Rank = 9

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
25,598	21,369	4,229	16.5%	\$3,393

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
270,124	217,960	52,164	19.3%	\$7,005

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
3,481,429	2,880,594	600,835	17.3%	\$10,398

# Elementary Schools Energy Use Fiscal YTD



Stephens Elementary			District Rank = 24	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
37,122	31,936	5,186	14.0%	\$5,917
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
306,747	294,608	12,139	4.0%	\$1,727
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,758,853	4,198,802	560,052	11.8%	\$7,644
Thoreau Elementary			District Rank = 16	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
33,576	27,316	6,260	18.6%	\$4,961
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
369,578	340,602	28,976	7.8%	\$3,947
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,618,573	3,893,696	724,878	15.7%	\$8,908

# Middle Schools Energy Use Fiscal YTD



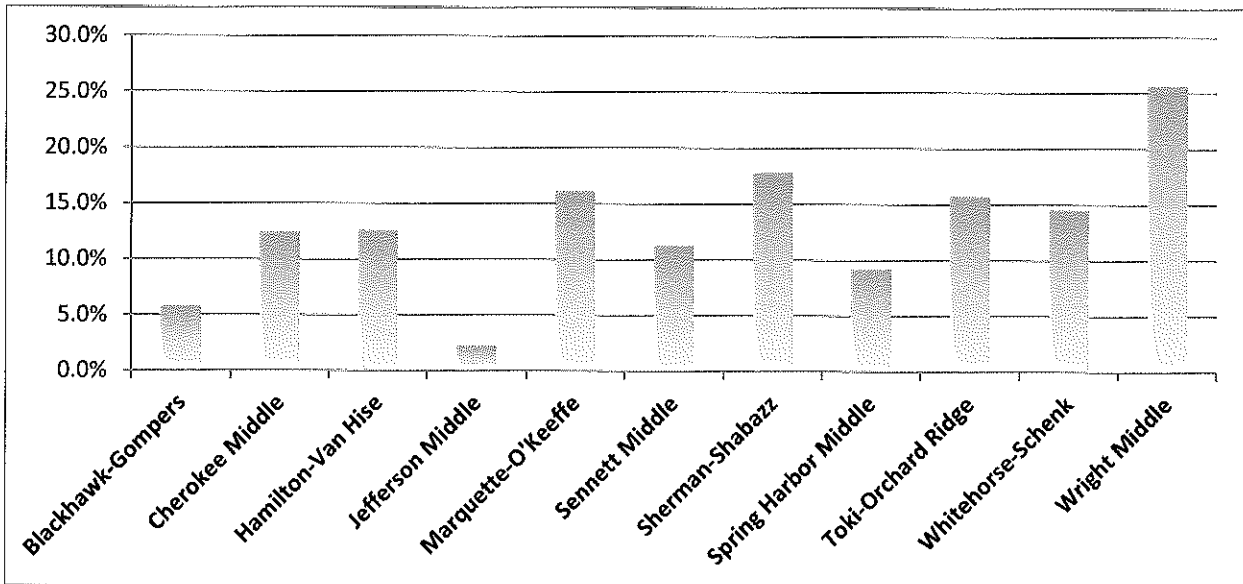
## Middle School Energy Use

Data for July '12 - Jun. '13

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
642,405	546,757	95,647	14.9%	\$66,495
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
5,445,885	4,969,587	476,299	8.7%	\$71,626
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
82,821,836	71,631,956	11,189,880	13.5%	\$138,120

- \* In general, the middle schools as a whole have improved greatly and all are showing positive improvement for the second straight year.
- \* Marquette-O'Keeffe, Toki-Orchard Ridge, and Sherman-Shabazz have moved toward the top for the first time, great job.
- \* Wright has moved to the top in savings with a strong year.
- \* Jefferson and Blackhawk-Gompers will continue to be focal points as they are at the lower end of savings, although positive.

The data immediately above represents energy savings information for just the middle schools and combination schools, and the following pages will get into more detailed information for each individual middle school. The chart below shows performance based on % energy saved.



# Middle Schools Energy Use Fiscal YTD



## Black Hawk Middle - Gompers Elem District Rank = 36

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
65,173	62,546	2,627	4.0%	\$1,518
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
577,970	511,573	66,397	11.5%	\$8,910
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
8,489,365	8,000,087	489,278	5.8%	\$10,428

## Cherokee Middle District Rank = 23

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
42,357	38,867	3,490	8.2%	\$2,871
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
398,595	297,492	101,104	25.4%	\$14,589
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
5,595,755	4,901,741	694,013	12.4%	\$17,460

## Hamilton Middle - Van Hise Elem District Rank = 22

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
98,790	84,033	14,757	14.9%	\$10,141
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
593,269	586,735	6,534	1.1%	\$937
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
11,903,200	10,405,240	1,497,960	12.6%	\$11,079

# Middle Schools Energy Use Fiscal YTD



## Jefferson Middle District Rank = 41

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
32,538	31,209	1,329	4.1%	\$704

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
306,885	318,111	-11,226	-3.7%	-\$2,129

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,300,854	4,206,294	94,559	2.2%	-\$1,425

## Marquette Elem - O'Keeffe Middle District Rank = 14

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
71,737	57,439	14,298	19.9%	\$12,317

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
632,090	611,145	20,945	3.3%	\$2,498

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
9,330,372	7,829,127	1,501,246	16.1%	\$14,815

## Sennett Middle District Rank = 26

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
30,308	28,282	2,026	6.7%	\$1,868

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
693,928	574,686	119,242	17.2%	\$15,548

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
5,398,448	4,789,030	609,418	11.3%	\$17,416

# Middle Schools Energy Use Fiscal YTD



## Sherman Middle - Shabazz City High District Rank = 8

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
85,200	68,373	16,827	19.7%	\$13,118

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
438,465	408,231	30,234	6.9%	\$3,957

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
10,016,027	8,230,184	1,785,843	17.8%	\$17,075

## Spring Harbor Middle District Rank = 29

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
24,447	21,801	2,645	10.8%	\$2,320

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
167,155	163,382	3,773	2.3%	\$462

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
3,015,014	2,737,606	277,409	9.2%	\$2,782

## Toki Middle - Orchard Ridge Elem District Rank = 15

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
82,997	66,750	16,247	19.6%	\$8,084

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
623,051	618,651	4,400	0.7%	\$730

YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
10,425,518	8,785,839	1,639,680	15.7%	\$8,814

# Middle Schools Energy Use Fiscal YTD



## Whitehorse Middle - Schenk Elem District Rank = 21

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
79,972	66,846	13,126	16.4%	\$6,960

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
503,574	474,017	29,557	5.9%	\$9,538

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
9,715,361	8,301,901	1,413,460	14.5%	\$16,498

## Wright Middle District Rank = 3

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
28,887	20,611	8,276	28.6%	\$6,594

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
510,903	405,564	105,339	20.6%	\$16,585

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,631,922	3,444,907	1,187,015	25.6%	\$23,179



# High Schools Energy Use Fiscal YTD



## High School Energy Use

Data for July '12 - Jun. '13

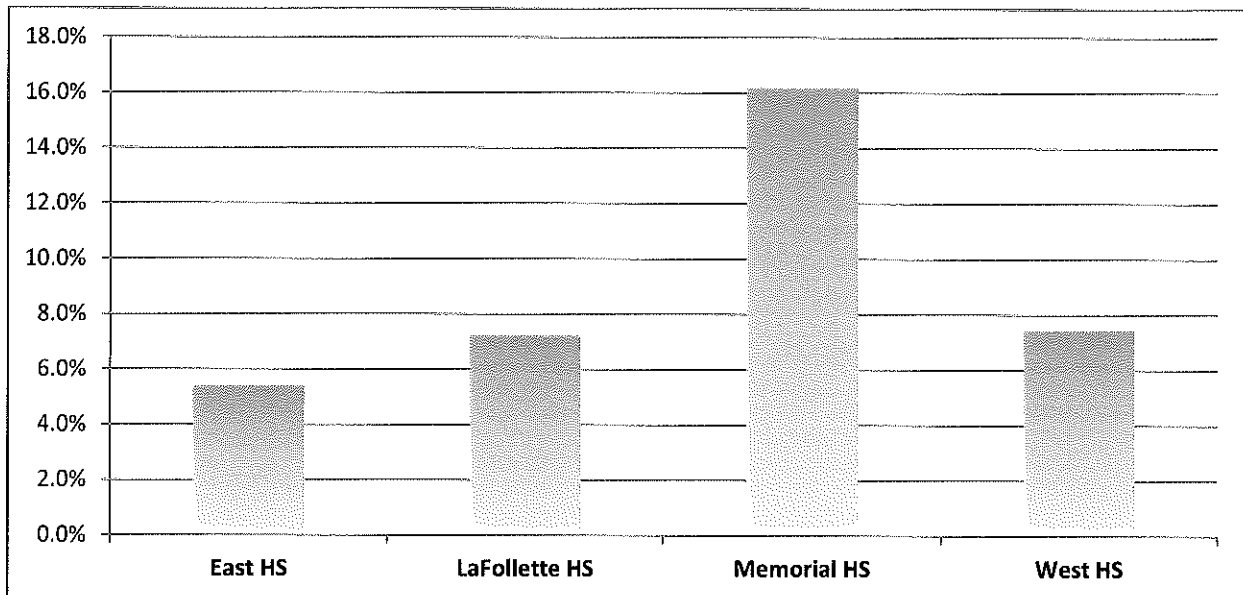
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
1,121,032	1,012,674	108,357	9.7%	\$74,670
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
8,929,775	8,371,823	557,952	6.2%	\$68,239
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
142,571,548	129,832,083	12,739,465	8.9%	\$142,909

\* Memorial HS stands out above the others with its energy improvements. The other 3 schools will be a focus in the fiscal 2013-14 school year. We are goaling ourselves to get these three to 10% by June of 2014.

\* Staff are definitely using the scheduling tool much more effectively, and we have see the manual overriding of equipment decrease significantly.

\* West HS will be one to keep track of as they have construction and new systems going on in the summer of 2013, and expect higher electrical usage.

The data immediately above represents energy savings information for just the high schools, and the following pages will get into more detailed information for each individual high school. The chart below shows performance based on % energy saved.



# High Schools Energy Use Fiscal YTD



<b>East High School</b>	<b>District Rank = 37</b>
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<b>YTD Gas Baseline (Therms)</b>	<b>YTD Gas Actual (Therms)</b>	<b>YTD Gas Saved (Therms)</b>	<b>YTD % Gas Saved</b>	<b>YTD Gas Cost Avoided</b>
298,458	280,964	17,494	5.9%	\$10,862
<b>YTD Electric Baseline (kWh)</b>	<b>YTD Electric Actual (kWh)</b>	<b>YTD Electric Saved (kWh)</b>	<b>YTD % Electric Saved</b>	<b>YTD Electric Cost Avoided</b>
2,443,299	2,353,557	89,742	3.7%	\$12,775
<b>YTD Total Energy Baseline (kBTU)</b>	<b>YTD Total Energy Actual (kBTU)</b>	<b>YTD Total Energy Saved (kBTU)</b>	<b>YTD % Total Energy Saved</b>	<b>YTD Total Energy Cost Avoided</b>
38,182,327	36,126,702	2,055,625	5.4%	\$23,636

<b>LaFollette High School</b>	<b>District Rank = 33</b>
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<b>YTD Gas Baseline (Therms)</b>	<b>YTD Gas Actual (Therms)</b>	<b>YTD Gas Saved (Therms)</b>	<b>YTD % Gas Saved</b>	<b>YTD Gas Cost Avoided</b>
253,596	235,540	18,056	7.1%	\$11,646
<b>YTD Electric Baseline (kWh)</b>	<b>YTD Electric Actual (kWh)</b>	<b>YTD Electric Saved (kWh)</b>	<b>YTD % Electric Saved</b>	<b>YTD Electric Cost Avoided</b>
1,787,618	1,652,515	135,104	7.6%	\$17,888
<b>YTD Total Energy Baseline (kBTU)</b>	<b>YTD Total Energy Actual (kBTU)</b>	<b>YTD Total Energy Saved (kBTU)</b>	<b>YTD % Total Energy Saved</b>	<b>YTD Total Energy Cost Avoided</b>
31,458,952	29,192,367	2,266,585	7.2%	\$29,534

# High Schools Energy Use Fiscal YTD



<b>Memorial High School</b>	<b>District Rank = 13</b>
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YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
250,384	200,946	49,439	19.7%	\$35,235

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
2,716,538	2,538,787	177,751	6.5%	\$20,429

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
34,307,264	28,756,896	5,550,368	16.2%	\$55,664

<b>West High School</b>	<b>District Rank = 32</b>
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YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
318,593	295,225	23,368	7.3%	\$16,928

YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
1,982,320	1,826,965	155,355	7.8%	\$17,147

YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
38,623,005	35,756,117	2,866,887	7.4%	\$34,075

# Other Facilities Energy Use Fiscal YTD



## Other Facilities - Admin, Services, Stadiums

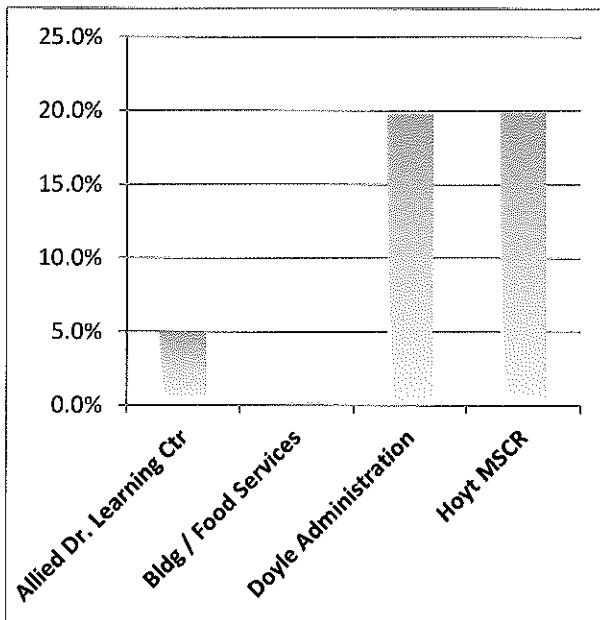
Data for July '12 - Jun. '13

YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
161,421	139,808	21,613	13.4%	\$16,425
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
2,701,923	2,340,037	361,886	13.4%	\$43,034
YTD Total Energy Baseline (kBtu)	YTD Total Energy Actual (kBtu)	YTD Total Energy Saved (kBtu)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
25,361,063	21,964,994	3,396,069	13.4%	\$59,460

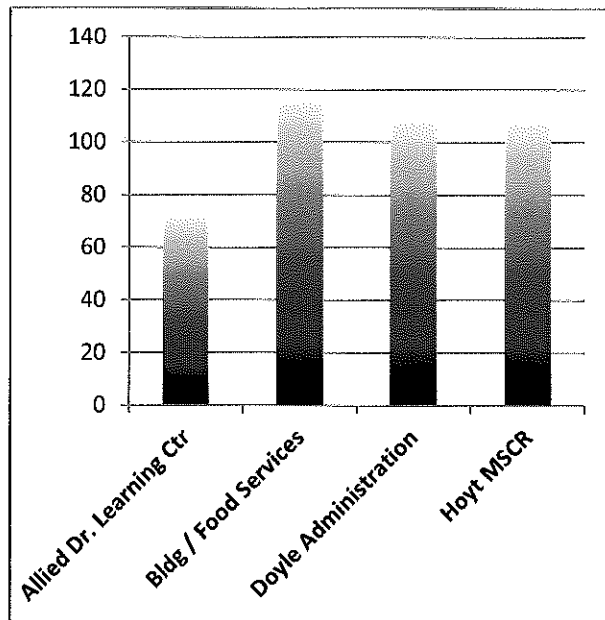
The data immediately above represents energy savings information for administrative, service, and recreational facilities, and the following pages will get into more detailed information for each of these facilities. The chart below shows performance based on % energy saved. The stadiums were left off as they are easily misrepresented when comparing to occupied facilities.

While the chart below on the left and the facility ranking on the following pages look favorably on the Hoyt and Doyle buildings, they are among the highest cost per square foot facilities and have much room for improvement (See kBtu / SqFt chart below right). Building Services needs attention and will be a priority as to why their gas usage is going in the wrong direction.

YTD % improvement



kBtu / SqFt



## Other Facilities Energy Use Fiscal YTD



Allied Drive Learning Center			District Rank = 38	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
4,337	4,199	138	3.2%	\$101
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
100,330	93,064	7,266	7.2%	\$1,108
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
776,013	737,404	38,609	5.0%	\$1,209
Building & Food Services - Pflaum Rd			District Rank = 43	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
48,104	50,218	-2,114	-4.4%	-\$704
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
888,317	821,425	66,892	7.5%	\$7,899
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
7,841,376	7,824,489	16,886	0.2%	\$7,195
Demitral Field			District Rank = N / A	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
0	0	0	0.0%	\$0
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
144	135	9	6.2%	\$1
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
491	460	31	6.2%	\$1

# Other Facilities Energy Use Fiscal YTD



Doyle Administration Building			District Rank = 7	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
69,725	55,025	14,700	21.1%	\$9,716
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
1,263,808	1,039,590	224,218	17.7%	\$26,007
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
11,284,633	9,049,583	2,235,050	19.8%	\$35,722
Mansfield Stadium			District Rank = N/A	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
0	0	0	0.0%	\$0
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
102,272	85,251	17,020	16.6%	\$1,291
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
348,951	290,877	58,073	16.6%	\$1,291
Hoyt - MSCR Building			District Rank = 6	
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided
36,343	28,688	7,655	21.1%	\$6,402
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided
261,045	221,762	39,284	15.0%	\$5,972
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided
4,525,034	3,625,451	899,582	19.9%	\$12,374

## Other Facilities Energy Use Fiscal YTD



<b>Lussier Stadium</b>					District Rank = N/A
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided	
2,911	1,678	1,233	42.3%	\$911	
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided	
79,474	75,965	3,509	4.4%	\$321	
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided	
562,277	427,023	135,255	24.1%	\$1,231	
<b>School Forest Buildings</b>					District Rank = N/A
YTD Gas Baseline (Therms)	YTD Gas Actual (Therms)	YTD Gas Saved (Therms)	YTD % Gas Saved	YTD Gas Cost Avoided	
0	0	0	0.0%	\$0	
YTD Electric Baseline (kWh)	YTD Electric Actual (kWh)	YTD Electric Saved (kWh)	YTD % Electric Saved	YTD Electric Cost Avoided	
6,533	2,845	3,688	56.4%	\$435	
YTD Total Energy Baseline (kBTU)	YTD Total Energy Actual (kBTU)	YTD Total Energy Saved (kBTU)	YTD % Total Energy Saved	YTD Total Energy Cost Avoided	
22,289	9,707	12,582	56.4%	\$435	

# Appendix

## \*Energy Calculation Information

The following information will explain how the energy savings and cost avoidance are derived.

The Base Year for this program is the "2009 Calendar Year" or January through December. All of the gas and electric utility bill information for 2009 was gathered and entered into a utility tracking program called Metrix, which is a well known weather regression program widely used in the energy industry. In addition to the utility data, 2009 weather data and building usage and occupancy data were also entered in Metrix. Metrix correlates all of this data to "Model" each electric and gas meter for all facilities in the Madison Metropolitan School District coming up with a Baseline Energy Use model for each facility. The third "Performance" year is July 2012 through June 2013. This data is then entered into McKinstry's EEM Suite which will then show data in report form. Actual current monthly weather data and actual current monthly gas and electrical usage are then entered into each energy model on a monthly basis to come up with the Current Energy Use. This Current Energy Use is then compared to the Baseline Energy Use coming up with the energy savings described below.

YTD – Defined as current fiscal Year To Date

YTD Gas Saved (Therms) = YTD Baseline Therms – YTD Actual Therms

YTD % Gas Saved = YTD Gas Savings / YTD Baseline Therms used

YTD Electric Saved (kWh or kilowatt-hours) = YTD Baseline kWh – YTD Actual kWh

YTD % Electric Saved = YTD Electric Savings / YTD Baseline kWh used

kBTU (1,000 British Thermal Units) – Unit of measure used to depict total energy used. It is used as a common unit of energy for both electrical and gas usage.

1 Therm = 100 kBTU or 100,000 BTU

1 kWh = 3.412 kBTU

YTD Actual kBTU = YTD Actual Therms and kWh used, use formulas above converting to kBTU, add them

YTD Baseline kBTU = YTD Baseline Therms and kWh used, convert to kBTU as before, add them

YTD Total Energy Saved (kBTU) = YTD Baseline kBTU – YTD Actual kBTU

YTD % Total Energy Saved = YTD Total Energy Saved / YTD Baseline kBTU

kBTU per Square Foot is a commonly used measure to determine how efficiently a building is performing as it compares to other facilities. This is updated on a monthly basis and is calculated over the most recent 12 months.

kBTU per SqFt = Actual kBTU used (current month + previous 11 months) / Square Footage of each facility)

YTD Gas Cost Avoided = Measured monthly rate (\$ / therm) x total therms saved that month, then total months of year

YTD Electric Cost Avoided = Measured monthly rate (\$ / kWh) x total kWh saved that month, then total months of year

*(The cost per unit values used in savings calculations are based on actual monthly gas and electric utility costs, less fixed customer charges which are not part of energy use. This resultant costs are then divided by the total monthly gas and electric consumption respectively to come up with the Measured monthly rates (\$\$/therm and \$\$/kWh). Then either the measured monthly rates, or the monthly "floor rates" (See note below), whichever is greater, are then multiplied by the monthly kWh and therm energy savings to generate that months cost avoidance.*

*Note: As cost avoidance dollars are guaranteed, per contract the 2009 base period year (Base Year) rates per month are as low as the rate can go (Floor Rate). The floor rate is the monthly cost / usage per month for the 2009 base period year.*