DesMoines PUBLIC SCHOOLS

ENERGY REPORT CARD

February 2010

What's the Buzz?

DMPS employees are inspired to save energy!

"My wife and I began to shut off our computers each night and only power up during usage and our electric bill fell to $135 per month from $150. We changed to the low-watt, high-output lights, monitored turning off lights when not in use and our budget billing is now $100 per month."
~ *Darrell Kitterman, Word Processing and Computer Application Instructor at East High*

"I bought a Prius car that gets 50 miles to the gallon and put in a geothermal furnace, changed all my light bulbs, and all of my appliances are energy efficient."
~ *Lavonne Franken, Special Education Teacher at Brubaker*

Did You Know?

"If every American home replaced just one bulb with an ENERGY STAR® light bulb, we would save enough energy to light more than 3 million homes for a year, about $700 million in annual energy costs, and prevent 9 billion pounds of greenhouse gas emissions per year, equivalent to the emissions of about 800,000 cars."

Click **CFLs** to learn more about compact fluorescent lights.

Click **LEDs** to learn more about light-emitting diodes.

Click the logo below to learn more about ENERGY STAR products.

energy
LEARN MORE AT energystar.gov

LED Lighting

According to the U.S. Department of Energy: "Artificial lighting consumes almost 15% of a household's electricity use. Use of new lighting technologies can reduce lighting energy use in homes by 50%–75%." Visit the DOE Web site by clicking "**Energy Savers**" to learn more about lighting.

In a world of ever-evolving technologies, there have been many advancements in lighting. Compact fluorescent lights (CFLs) save more energy and provide cost savings over incandescent bulbs. Light-emitting diodes (LEDs) are found to use even less energy than CFLs, but have had limited applications. However, that is changing. Des Moines Public Schools, in its continual pursuit to become more energy efficient, frequently reviews energy-saving technologies and decides if they will align with the district's energy-saving and operational strategies. New technology has made it possible to consider LEDs for certain space types. Merrill Middle School's auditorium was a good candidate to re-lamp with LEDs considering the lower ceiling heights and the absence of dimmers (LEDs are not dimmable). Benefits other than energy and cost savings to using the LED include:

- Instant-on, no waiting for lights to warm up
- Emits virtually no UV/IR light in the beam
- Has a rated average life of 45,000 hours compared to 10,000 hours for a CFL
- 11W LED saves 39 watts of energy when compared to a 50W halogen bulb
- Contains no mercury

Source: **www.philips.com**

Chart source: **www.eartheasy.com**. Click on their Web site to view more information comparing lighting technology.

	LED	CFL	Incandescent
Light bulb projected lifespan	50,000 hours	10,000 hours	1,200 hours
Watts per bulb (equiv. 60 watts)	6	14	60
Cost per bulb	$35.95	$3.95	$1.25
KWh of electricity used over 50,000 hours	300	700	3000
Cost of electricity (@ 0.20per KWh)	$60	$140	$600
Bulbs needed for 50k hours of use	1	5	42
Equivalent 50k hours bulb expense	$35.95	$19.75	$52.50
Total cost for 50k hours	$95.95	$159.75	$652.50

Thank you for helping to conserve our energy resources.

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Understanding the *Energy Usage Report*

kBtu — The unit of measure for energy sources can vary from the type of energy to the region you live in. For DMPS, electricity is measured in kilowatt hours and natural gas is measured in therms. By using British thermal units (Btus) to measure energy, multiple units of measure can be converted to one unit of measure. The district uses kBtu, which means thousands of Btu.

Per Square Foot — A high school consumes more energy than an elementary school because of the increased size or square footage of the building. We measure energy performance by square foot to be able to compare buildings of varying sizes.

Percent Change as Compared to — There are many factors that impact the increase or decrease in energy consumption — building occupant habits, mechanical systems (heating and air conditioning), building envelope (doors and windows), and lighting, to name a few. The percentage change indicates performance compared to the same time period from the previous year. A minus sign preceding the percentage indicates a decrease. The header indicates the reporting period or the months included in the report.

What is a carbon footprint?

A **carbon footprint** is the total set of greenhouse gas (GHG) emissions caused by an organization, event or product. For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted. The concept and name of the carbon footprint originates from the ecological footprint discussion.

Source: Wikipedia

YEAR-TO-DATE SITE ENERGY USAGE REPORT

July 1, 2009 – December 31, 2009

Percentage change as compared to the same time period from previous year

Ranked Lowest to Highest Energy User (measured in kBtu/sq ft)

Site	% Chg as compared to '08-'09	kBtu/ Sq Ft
Wakonda Ste 23 ♦		1
McKee ♦		7
Stowe	-12%	10
King ■		10
Hillis	-16%	10
South Union	-9%	12
Perkins	-9%	12
Windsor	-14%	12
Morris	-23%	12
Greenwood	-14%	13
Samuelson	-29%	13
Hanawalt	-12%	14
Brubaker	-17%	14
Carver	-7%	15
Goodrell	-15%	15
Oak Park	-11%	16
Callanan	-25%	17
Capitol View	-28%	18
Weeks	-6%	19
Hubbell	-18%	19
Cattell	-12%	19
Garton	-7%	20
Monroe	-33%	20
Wright	-6%	20
Facility Mgmt	-16%	20
Willard	-6%	21
Findley	-15%	22
Aviation Lab	-16%	22
McKinley	-21%	22
Pleasant Hill	-5%	23
McCombs Greenhouse	-38%	24
Jefferson	-20%	24

Site	% Chg as compared to '08-'09	kBtu/ Sq Ft
Downtown school	-2%	24
Casady	-3%	25
Howe	-7%	25
Phillips	-10%	25
East Academy	-10%	26
Cowles Elementary	-15%	26
Central Academy	-21%	26
Moulton	-25%	28
River Woods	-26%	28
Mann (Jackson)	1%	28
Harding	-13%	29
Madison	-21%	30
Welcome Center	-6%	30
Central Campus •	-20%	30
Hiatt	-9%	32
Lincoln South	-7%	32
Hoyt	-9%	33
Hoover/Meredith	1%	34
Lincoln	-8%	34
Lovejoy	-5%	35
East	0%	36
Edmunds	2%	36
Walnut Street	-8%	36
Roosevelt •	-21%	37
Studebaker	-13%	38
River Plaza	1%	38
Merrill	101%	39
Park Ave	-8%	40
McCombs	-28%	41
Brody	-13%	44
Van Meter	0%	44
North	-3%	47
Smouse	-12%	51

■ Building under construction comparison year 2008-09
● Building occupied during renovations
♦ Building unoccupied part of comparison year 2008-09

Visit **www.dmps.k12.ia.us** for more details of the district's energy mission and building performance.

Tell us about it! Do you want to share your ideas for saving energy or helping our environment? Or want to let us know about your projects? E-mail **lisa.simpson@dmps.k12.ia.us**.