

Water Conservation Measures

Saving water is an important part of protecting our environment. DMPS has taken a number of measures to help reduce the amount of water used in the district's buildings. This has included the installation of low flow faucets, auto flush toilets, and high efficiency kitchen equipment, among others.

The following buildings reduced their water usage by at least 25% from 2014 to 2015.
WAY TO GO!

Operations Center—60%
Greenwood—41%
Welcome Center—35%
Edmunds—30%
Van Meter—25%



LED LIGHTING UPGRADES

Did you know that the lighting in our homes and workplace account for, on average, 30-percent of the electricity that we use? Always looking for a way to improve energy efficiency and the environments in which our students learn, the DMPS Facility Management Department has been transitioning to LED lighting in a number of DMPS schools. Following on last year's switch to reduced-wattage fluorescent lamps in many of the District's elementary schools and the conversion of the District's exterior lighting to LED, the Facility Management Department is installing high-efficiency LED light fixtures in select interior locations throughout the district. These new LED fixtures provide better quality light, use less energy and will provide educators with the ability to dim light levels in their classrooms to better suite their particular classroom needs. To date, Meredith Middle, Howe Elementary, McCombs Middle, Oak Park Elementary and the Dean Avenue Operations center have received new LED interior lighting.

Greenhouse Gases

Planet Earth is warm enough to sustain life thanks to gases in the planet's atmosphere that hold heat. These gases are called *greenhouse gases* (GHG)



because they act just like a greenhouse — trapping the heat inside the planet's atmosphere, making the average temperature on Earth 59 degrees Fahrenheit (15 degrees Celsius). The more greenhouse gases in the atmosphere, though, the warmer the average temperature gets. Fortunately, a beneficial effect of the energy conservation measures that DMPS has put in place is a reduction in the amount of greenhouse gases produced in the operation of DMPS's facilities.

To help put this in perspective, from 2014 to 2015, DMPS reduced GHG emissions by more than 3,200 Metric Tons CO₂e (carbon dioxide equivalent). This is the equivalent of:

- GHG emissions from 682 passenger vehicles driven for one year.
- CO₂ emissions from 364,420 gallons of gasoline consumed
- CO₂ emissions from 295 homes' energy use for one year.
- Carbon sequestered by 83,041 tree seedlings grown for 10 years.

Did you know?

- U.S Energy consumption could be cut by 11% by 2020 through simple building efficiency measures such as more efficient lighting, water heating, and appliances.
- The U.S. houses 5% of the world's population, but uses 23% of the world's energy.
- In the average home, 75% of the electricity used to power home electronics is consumed while the products are turned off. The average desktop computer idles at 80 watts, while the average laptop idles at 20watts. A Sony PlayStation 3 uses about 200 watts and nearly as much when idle. Idle power consumes more electricity than all the solar panels in America combined.

Bring ENERGY STAR to the Classroom!

In an effort to promote energy efficiency within the District, the DMPS Energy Team wants to help teachers discuss this valuable message in the classroom. Director of Facilities Jamie Wilkerson and Energy and Environmental Specialist Dave Berger would like to visit interested schools and classes. From light bulb efficiency to heating and cooling, discussions are intended to educate students on the efforts the District is making and how they, too, can make an impact. To schedule a visit, please contact Sarah Holland at extension 7860.

Bottle Bill by Drew Peterson, Lincoln High School

The steel can replaced glass beer containers in the early 1930s, All other beverages were still in glass. In the 1940s plastic bottles were introduced and gradually became more and more popular until the 1960s. Plastic bottles were in everyday life. After realizing plastic takes a long time to decompose, people came together to try to ban plastic bottles in the US or at least reduce the use of them to help save the environment. One of the ways to reduce plastic bottle waste is to recycle it. The average person doesn't always have a use for all of their plastic bottles, so the bottle bill was introduced for people to take soda /pop bottles back and get money in return.



In IESA we've done a project over the bottle bill and have recycled many bottles to take back to get money for the class, and only some plastic bottles are able to take back. We've also studied that the Bottle Bill is only active in some states not nationwide. I think we should expand the variety of bottles we can recycle, and turn the bottle bill into a federal enforcement. IESA has really opened my eyes to how much plastic harmfully goes into our environment and how much more we could actually recycle.

Legislative Laws by Olivia Hicks, Roosevelt High School



In the 1st year of IESA, one of the many topics we explore is legislative acts that have affected the environmental community and movement. Though these acts have not necessarily affected our program directly, they have impacted the many topics we have researched and how we become more aware of environmental issues around us.

One of the most prominent legislative acts is the Endangered Species Act. In the mid-1960s, the U.S. became increasingly concerned with the health and conservation of the nation's wildlife, and the many species whose numbers continued to decline. In 1966, Congress passed the Endangered Species Preservation Act, creating a list of the world's known species that were threatened, endangered, or extinct. This act started an environmental movement which advocated for the protection and preservation of ecosystems that contained endangered or threatened species. Following this, the act allowed the government to set boundaries to preserve habitats and ban the construction of urban areas in those regions. In 1969, the act was amended to reach a world-wide scale by prohibiting the importation and sale of foreign species in the U.S.

Two other very important legislative acts that we researched are the Clean Air and Clean Water Acts. The Clean Air Act, established in 1970, is the federal law that regulates air emissions from stationary and mobile sources. The main goal of this act was to establish National Ambient Air Quality Standards in every state by 1975 in order to protect public health and public welfare, as well as regulate emissions of hazardous air pollutants. The Clean Water Act also was key in contributing to the environmental movement and the health and welfare of our nation's waterways. This act's main purpose was to establish a way of regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters. The act was enacted in 1948 and has made it unlawful to discharge any pollutant from a point source into a body of water that is occupied by ships or boats, unless a permit was obtained.

These environmental legislative acts have impacted the everyday lives of many people and the health of numerous species. All three of these acts have helped shape and start the environmental movement, which advocates for the overall protection of the environment and the various occupants that it contains.

Plastics Research Lab by Taryn Alessio, Lincoln High School

In the first year of IESA we study plastics. We look into the how they are made and later how they are broken down. We look at the bottom of any plastic container and how each one has a number 1-7 inside a small triangle. The number on the bottom



PLASTIC RESIN CODES						
1 PETE	2 HDPE	3 LDPE	4 PP	5 PP	6 PS	7 OTHER
Highly recyclable	Highly recyclable	Highly recyclable	Highly recyclable	Highly recyclable	Highly recyclable	Highly recyclable
Commonly used in soda bottles	Commonly used in milk jugs	Commonly used in plastic bags	Commonly used in yogurt containers	Commonly used in margarine tubs	Commonly used in Styrofoam	Commonly used in various plastic products

can offer a great deal of information regarding the toxic chemicals used in the plastic, how likely the plastic is to leach, how bio-degradable the plastic is, and ultimately the safety of the plastic. The lower the number the safer and more bio-degradable the plastic is, but as you get into higher numbers these are the plastics that use more chemicals and it is more difficult to break down these plastics.

We have been collecting plastics of all different complexities and plan to do a lab with them soon. We will dig deeper into what the numbers on the bottom really mean and how they can be determined. IESA has taught us what plastics are more environmentally friendly and which ones we should try to stay away from using.

Yellow Energy Sticker Guide by Prince Gailah, Lincoln High School

In the second year of IESA we did a project on The Yellow Energy stickers. Which is basically information about the energy consumption, efficiency, and operating costs of appliances and consumer products. Clothes washers, dishwashers, refrigerators, freezers, televisions, water heaters, window air conditioners, mini split air conditioners, central air conditioners, furnaces, boilers, heat pumps, and other electronic appliances are all required to have Energy Guide labels.



It tells you information about the appliance that you're using. It helped us in IESA because Mr. Beall gave us an assignment to find out information about all the appliances in our home. So- the Energy Guide is a great way to do things like that. Not just for people who take a class requiring it, but those who might be curious or want to learn about it.

ENERGY REPORT CARD

SITE ENERGY USAGE REPORT

There was an 15% decrease in the total number of degree days during the comparison timeframe. Degree days provide a way to evaluate the amount of fuel required to heat or cool a building by comparing average daily temperatures to a standard temperature of 65°.

January 1, 2015 to December 31, 2015

Percentage change compared to same time period of previous year.

Site	Total Energy (mBtu)	kBtu/SqFt	% Change	ENERGY STAR Score	Site	Total Energy (mBtu)	kBtu/SqFt	% Change	ENERGY STAR Score
Stowe	1,712	30.1	-29.52%	95	Lovejoy	1,493	38.1	-11.97%	86
North	10,748	43.1	-29.02%	92	Walnut Street	7,807	67.1	-11.44%	34
Van Meter	4,319	75.4	-28.32%	73	Jefferson	1,426	31.1	-11.11%	83
Smouse	4,689	87.1	-28.23%	48	Hoover/Meredith**	16,817	56.2	-10.25%	89
Studebaker	1,540	33.9	-23.07%	93	Carver	2,087	22.8	-9.49%	96
Walker St	1,879	42.5	-22.82%	55	Riverwoods	3,420	54.3	-9.00%	88
Cattell	1,886	39.4	-21.71%	99	McKinley	2,589	51.8	-6.93%	87
Roosevelt	15,649	65.3	-21.47%	75	Cowles	1,804	42.1	-6.89%	70
Moulton	6,400	52.6	-21.45%	94	Hiatt	3,425	31.2	-6.78%	90
McCombs	3,133	35.5	-20.19%	97	Lincoln	22,591	72.3	-6.10%	82
Brody	5,526	56.3	-20.14%	90	Perkins	1,561	26	-6.03%	98
Central Campus	25,410	55.6	-19.34%	89	Madison	1,572	37.4	-5.81%	97
Operations	3,287	33.7	-19.31%	74	Pleasant Hill	997	24.2	-5.50%	98
Harding	4,174	33.3	-19.21%	96	Park Ave	1,956	30.1	-4.74%	96
Central Academy	4,204	48.6	-19.15%	60	South Union	2,082	30.4	-4.32%	95
CNC	11,812	210.2	-18.70%	N/A	Brubaker	2,400	30.7	-3.80%	95
Monroe	3,586	48.5	-18.42%	89	Edmunds	1,533	20.1	-3.66%	99
Weeks	4,742	42.2	-16.51%	94	King	1,311	24.2	-3.50%	98
Hoyt	5,443	54.1	-16.30%	95	Woodlawn	1,050	22.6	-3.15%	N/A
East	23,071	67	-16.21%	84	Oak Park	2,017	33.9	-2.31%	92
Samuelson	1,871	31.9	-16.14%	93	Howe	1,349	35	-1.43%	82
Hillis	1,609	27.9	-15.89%	97	Findley	1,393	32	-1.29%	93
Willard	2,418	40.8	-14.67%	92	Mitchell	1,174	37.1	-1.26%	69
Prospect	4,935	93.9	-14.26%	44	Morris	1,789	25.3	-0.66%	98
Garton	2,857	43.5	-13.79%	73	Hanawalt	1,509	34.9	-0.48%	92
Merrill	4,346	46.2	-13.38%	98	Wright	1,152	38	-0.29%	82
Greenwood	1,632	26.4	-12.80%	96	Callanan	4,942	42.6	1.01%	90
Phillips	1,997	47.6	-12.70%	88	McKee	853	19.7	8.52%	89
Goodrell	2,918	26.4	-12.70%	97	Jackson	1,578	34.6	11.94%	94
Lincoln RAILS	5,920	55.6	-12.54%	55	Welcome Center*	937	101.6	46.43%	N/A
Windsor	1,484	24.5	-12.45%	97	Mann***	1,546	47.6	N/A	98
Hubbell	2,496	46.8	-12.24%	91	Taylor***	188	4.1	N/A	100
Capitol View	2,894	38.2	-11.99%	97	Moore****	N/A	N/A	N/A	N/A

Only buildings with a score of 75 or higher are eligible for ENERGY STAR Certification

Green = Decrease in energy use

Yellow = Maintained usage within 10%

Red = Increase in energy use

* Welcome Center has a large increase due to the addition of the walk-in freezer.
 ** Hoover/Meredith buildings are combined due to combined meters.
 *** No comparison data for Mann or Taylor
 **** No data available for Moore due to renovations.

Visit www.dmschools.org for more details of the district's energy mission and building performance. Do you want to share your ideas for saving energy or helping our environment? Or want to let us know about your projects? Tell us about it! E-mail Sarah.Holland@dmschools.org