

# Milwaukee County 2014 Environmental Sustainability Update

Milwaukee County Board of Supervisors  
Committee on Parks, Energy and Environment

Prepared March 23, 2015 by  
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## 1. Focus Area: Performance Contracting / Construction

- a) Under several multi-year **guaranteed energy savings performance contracts** (GESPCs), Milwaukee County has implemented \$9.2 million in energy efficiency improvements at 82 County facilities. The GESPCs were implemented in two phases: Phase 1 contracts, with Honeywell, Johnson Controls, and Ameresco, were completed in 2009; Phase 2 contracts, initiated with Honeywell and Johnson Controls in 2010, are also complete but remain open for monitoring & verification.
- b) The Department of Transportation (MCDOT) will seek LEED green building certification for the General Mitchell International Airport (GMIA) **bag claim renovation and expansion** project once the work is completed.
- c) During 2014, approximately 88 percent of **construction and demolition waste** generated by Milwaukee County capital improvement projects was diverted from the landfill.
- d) Since 2007, Milwaukee County has earned almost \$1 million in incentives through **Focus on Energy** (FoE), Wisconsin's statewide program for energy efficiency and renewable energy. The County has put the incentives to wise use, implementing projects that will save approximately \$1.5 million per year in energy over their expected lifetimes. The Appendix lists FoE incentives awarded to the County as of January 13, 2015.

## 2. Focus Area: Resource Management

- a) Milwaukee County Environmental Services, 1000 Friends of Wisconsin, and the Milwaukee Metropolitan Sewerage District (MMSD) are partnering to address regulatory barriers to **green infrastructure**, or 'stormwater management systems that mimic nature by soaking up and storing water' (USEPA).

Supported by a 2012 Fund for Lake Michigan grant, the partners have identified regulations that create barriers to implementing green infrastructure in the Menomonee River Watershed. Participating municipalities including Germantown, Menomonee Falls, Butler, Brookfield, Wauwatosa, Elm Grove, City of Milwaukee, West Milwaukee, and Greenfield then adopted the group's recommendations into their ordinances.

The success with the Menomonee River watershed group has resulted in additional grant funding and the project being expanded to cover all municipalities within Milwaukee County and MMSD's service area.

- b) Environmental Services has completed Milwaukee County's **NR 216 Annual Stormwater Report**. The report is a required submission to the Wisconsin Department of Natural Resource as part of the County's stormwater permit. The report will be posted to the following web page after March 31, 2015:  
<http://county.milwaukee.gov/EnvironmentalServices>.
- c) In 2014, the Department of Administrative Services issued guidelines on the safe and efficient use of electrical appliances and equipment in Milwaukee County facilities. The **Electrical Appliances & Equipment Guidelines** are effective at the County Courthouse and the 633 Building and eventually will become mandatory at other County facilities. The guidelines are posted to the following web page:  
<http://county.milwaukee.gov/ElectGuidelines>.
- d) In October 2014, local non-profit The Energy Exchange began constructing an **urban orchard** located on County-owned land at 4000 S. 6th St. The project will feature fruit trees and native perennial plantings, a bio-swale to store rain water and irrigate the trees, and a permeable parking lot to capture rain water and serve the neighboring Garden District Farmers Market. Made possible through a grant from the Milwaukee Metropolitan Sewerage District, the project is supported by Milwaukee County, the City of Milwaukee, NIDC, the Garden District Neighborhood Association, and The Gateway to Milwaukee.

### **Focus Area: Alternative Energy**

- a) The Milwaukee Public Museum (MPM) recently became host to one of the only **solar walls** in the U.S. In fall 2015, 234 solar photovoltaic (solar electric) panels were installed on the south façade along Wells Street. The solar wall will generate 77,533 kilowatt hours of electricity per year - enough to power seven homes. In addition, the Museum updated its exhibit 'MPM Going Green' to display real-time energy generation data for the solar wall, and also explaining how solar energy works.
- b) As directed by the County Board in January 2014, MCDOT is conducting a **solar feasibility study** at GMIA. Working with consultant HMMH, MCDOT is assessing the feasibility of large scale (1-megawatt or greater capacity) solar energy generation on GMIA grounds. In February 2015, HMMH completed a draft of the first phase of the study, which focused on technical feasibility issues, identified potential sites for a solar farm, and then prioritized those sites. The County has authorized HMMH to begin work on the 2nd and 3rd phases of the study, which will focus on economic feasibility and legal issues.
- c) Two **electric vehicle charging stations** have been installed at the GMIA parking garage. The stations, which provide Level 2 charging, are located on the third floor of the parking garage near the moving walkway, at the beginning of row Yellow 3E. The stations are part of the Chargepoint® Network and can charge two vehicles per station. The ports provide 240 volts, with charge time depending on the number of vehicles charging and the charge left on the battery. There is a \$5.00 per use fee for charging vehicles. Daily parking rates also apply.

#### 4. Focus Area: Education & Outreach

- a) In November 2014, MPM employee Dawn Koceja won the **Project WILD Facilitator of the Year Award** for her outstanding efforts to strengthen environmental literacy in Wisconsin.
- b) In May 2014, the Wisconsin Urban Forestry Council awarded a **Project Partnership Award** to Milwaukee County Zoo docents, and their partners the American Association of Zoo Keepers and the local Arctic Ambassadors of Polar Bears International. The award honored these organizations' 'Trees for You and Me' program, a national fundraiser for urban tree planting held each February.
- c) Modeled after similar programs elsewhere in the U.S., the **Kill-a-Watt Challenge** is Milwaukee County's annual energy conservation challenge. The goal of the 2014 challenge was to reduce June-August electricity use in Milwaukee County facilities by 3 percent relative to 2012.

The results are in, and the winner of the 2014 Kill-a-Watt Challenge is... City Campus. Compared with 2012, electricity use at City Campus was 29 percent less from June through August. Research Park, Fleet Maintenance, and the House of Correction (HOC) also performed well, using over 20 percent less electricity during the challenge.

Collectively, Milwaukee County facilities saved 3.9 GWh (about \$238,000) in electricity during the 2014 Kill-a-Watt Challenge. All but one of the facilities met our three percent electricity use reduction goal. This suggests that the County's conservation and efficiency initiatives are having a positive impact on energy use and costs.

- d) The Office of Sustainability continues to publish **Sustainability Update**, an electronic newsletter that promotes Milwaukee County's environmental stewardship activities. During 2014, editions of the newsletter were published in spring, fall, and winter. To subscribe to *Sustainability Update*, visit <http://county.milwaukee.gov/sustain>.
- e) The Office of Sustainability and the Wisconsin Green Building Alliance offered three **'Sustainable Building for Municipalities'** workshops in 2014. The workshops, which were open to local government employees, included the following topics: core concepts of green building, construction and demolition waste recycling, and energy management systems.
- f) The Office of Sustainability, the Wellness Program, and DPRC are partnering once again to host Milwaukee County **Bike to Work Day**. The event, to be held in June 2015, will likely feature guided bicycle rides, as well as bike safety training for County employees and their families.
- g) From May-September 2014, a team of Milwaukee County employees cycled more than 17,700 miles, or the equivalent of five coast-to-coast trips across the U.S. The 27-member team was participating in the **National Bike Challenge**, a League of American Bicyclists program intended to get people on their bicycles for exercise, fun, transportation, etc.
- h) Milwaukee County continues to raise environmental awareness in the community by hosting annual events like the **Green Living Festival** at Mitchell Park Domes, the **In**

**Celebration of Earth Day** event at Wehr Nature Center, and the Zoo's **Party for the Planet**.

## 5. Focus Area: Staffing / Resources

- a) The **Natural Areas Internship Program** had another great year in 2014, with three interns gaining important natural resource career skills while donating 398 hours to the program.
- b) In June 2014, AE & ES hired Jack Sudar as its new **Environmental Engineer**. An Engineer in Training, Jack previously worked as a System Monitoring and Industrial Waste Intern with the Milwaukee Metropolitan Sewerage District. He has a bachelor's degree in civil engineering with an emphasis in water resource and environmental engineering from the University of Wisconsin, Milwaukee.

## 6. Focus Area: Energy Efficiency

- a) **Total energy use** for all Milwaukee County facilities increased by six percent from 2012 to 2014. **Total energy costs** were up by 13 percent. However, adjusted for weather, total energy use was two percent less in 2014 versus 2012. So, as in 2013, colder-than-normal weather had a significant impact on the County's energy use in 2014.

	2012	2013	2014
Total Energy Use (MMBtu)*	2,436,362	2,520,870	2,574,381
Weather Normalized Energy Use (MMBtu)*	2,523,796	2,473,391	2,460,956
Total Energy Charges	\$19,773,788	\$20,586,046	\$22,320,286

\* Reported as source energy, which represents the total amount of raw fuel that is required to operate County facilities. It incorporates heat and electricity consumed plus transmission, delivery, and production losses.

- b) MPM's newest exhibit, '**Crossroads of Civilization**', is its greenest yet - with LED lighting, low VOC carpeting and paints, and recycled exhibit cases and label mounts.
- c) As part of ongoing **retro-commissioning** activities, MCDOT is making improvements to heating, ventilation, and air conditioning systems at GMIA. Once completed, the improvements are anticipated to save more than 660,000 kWh of electricity and 200,000 therms of natural gas per year, for a total annual cost savings of approximately \$150,000.

## 7. Focus Area: Procurement

- a) The Office of Sustainability has purchased **EnergyCAP software** that will quantify Milwaukee County's energy use and costs. EnergyCAP will enable the County to better measure, manage, and monitor the energy performance of more than 220 of its facilities, including GMIA, HOC, the Mental Health and Courthouse complexes, as well as over 100 parks.
- b) The Zoo was granted \$8,520 from the County's Innovation Fund to purchase and replace conventional light bulbs with **LED bulbs** in the Zoofari Conference Center, Australian Building, and Peck Welcome Center. The project is expected to reduce lighting costs in impacted spaces by 86 percent.

## Appendix: Focus on Energy Incentives

As of January 13, 2015, Milwaukee County has been awarded Focus on Energy incentives for the following energy efficiency and renewable energy projects:

<b>Date</b>	<b>Project Description</b>	<b>Incentive Awarded</b>
Aug-10	Courthouse-Energy Performance Contract	\$159,679
Dec-07	Milwaukee County Courthouse - PC Lighting	\$73,482
Sep-09	Zoo Staffing Grant	\$63,294
Aug-10	Children's Court Center-Phase 2 GESPC	\$39,504
Aug-09	Milwaukee County - 2009 Staffing Grant - 08/09	\$37,100
Aug-10	Fleet Garage-Phase 2 GESPC-08/10	\$32,872
Sep-10	Milwaukee County Zoo - Solar Electric	\$26,197
Sep-09	V Phillips Juv Justice Center - Solar Water Heating	\$21,109
Dec-07	O'Donnell Park - PC Multiple Measures - Staffing	\$20,012
Nov-12	Boerner Botanical Gardens - Chiller	\$15,714
Jun-11	Fleet Garage - Solar Electric	\$15,486
Sep-14	Fleet Services - Boiler	\$15,000
Jun-13	House of Corrections - Hood Ventilation	\$14,200
Sep-14	Children's Court - Boiler	\$12,000
Dec-07	King Park - PC Multiple Measures - Staffing	\$11,865
Dec-07	Kosciuszko Park - PC Multiple Measures - Staffing	\$10,410
Mar-12	Correctional Facility ERV	\$9,810
Dec-07	Wilson Park - PC Multiple Measures - Staffing	\$7,404
Jan-13	Child Adolescent Trmt Cntr - Lighting	\$7,309
Sep-09	GMIA Admin Bldg - T5 Lighting Upgrade	\$6,790
Mar-10	Juneau Park Pavilion - Solar Electric	\$6,028
Apr-14	Zoo - Lighting	\$5,756
Sep-10	Wilson Park Senior Center - Solar Electric	\$5,287
Feb-09	Milwaukee Cty Airport Division - New Const	\$3,660
Nov-10	Public Museum - 3rd floor exhibit relighting	\$3,102
Aug-14	Mitchell Domes - Steam Trap Repair	\$3,100
Jul-10	Washington Park - Solar Thermal	\$3,000
May-10	Airport Division - NC Lighting - 05/10	\$2,730
Nov-14	House of Corrections - Cooling & Htg Tune up	\$2,560
Feb-13	Zoo - Htg Equip Tune up	\$1,902
Dec-09	GMIA Ticketing Roadway-LED upgrades	\$1,812
Oct-14	House of Corrections - Lighting	\$1,800
Dec-10	House of Corrections Laundry Lighting	\$1,480
Dec-07	Washington Park - PC Multiple Measures - Staffing	\$1,420
Jan-08	Zoo Australian House - Boiler Replacement	\$1,167
Apr-12	Fleet Admin Bldg - Lighting	\$1,029
Feb-08	Milw Co Parks - Svc Buydown	\$946

Mar-13	Correctional Facility South - Htg Equip Tune up	\$890
Dec-07	Noyes Pool - PC Multiple Measures	\$808
Jul-11	Wil-O-Way Pavilion	\$750
Aug-11	Behavioral Health Division - Food Service Equip	\$750
Apr-09	House of Corrections - Lighting/High Bay	\$720
Oct-10	House of Corrections - T12 to T5 retrofit	\$525
Dec-07	Pulaski Pool - Perf Contract Multi Measures	\$482
Jan-10	Mitchell Park Domes - Heating Tune Up/Boiler	\$400
May-14	Zoo- ZooFari Conf Bldg - Lighting	\$380
Jan-09	Milwaukee County Greenhouse - Service Buydown	\$200
Jan-09	Mitchell Park Conservatory - Service Buydown	\$200
Jan-10	Greenhouse - Heating Tune Up/Boilers	\$200
Nov-14	Zoo - Lighting	\$160
Sep-14	Zoo - Wolf Den - Lighting	\$150
Aug-14	Zoo - Parking Lot - Lighting	\$120
Jan-10	Wilson Park Ice Rink - Heating Tune Up/Boiler	\$100
Sep-10	Zoo Aquatic Reptile Cntr - Solar Hot Water Assmt	\$100
May-08	Dept of Parks Recreation and Culture (CFLs)	\$48
Aug-14	Zoo - Anaconda Cage - Lighting	\$30
May-08	Parks - Lighting (CFLs)	\$24

### **About Focus on Energy**

Focus on Energy is Wisconsin utilities' statewide energy efficiency and renewable resource program funded by the state's investor-owned energy utilities and participating municipal and electric cooperative utilities. Focus on Energy works with eligible Wisconsin residents and businesses to install cost-effective energy efficiency and renewable energy projects. Focus on Energy information, resources and financial incentives help to implement projects that otherwise would not be completed. Its efforts help Wisconsin residents and businesses manage rising energy costs, promote in-state economic development, protect our environment and control Wisconsin's growing demand for electricity and natural gas. For more information call 800.762.7077 or visit [focusonenergy.com](http://focusonenergy.com).