

## **April 2014 Update - Milwaukee County's Green Print**

Prepared March 25, 2014 by:

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### **1. Performance Contracting / Construction**

- a) Architectural, Engineering and Environmental Services (AE &ES) recently prepared Leadership in Energy and Environmental Design (LEED) checklists for two projects: War Memorial HVAC Improvements and Central Fleet Maintenance Building Remodeling. Although the projects are not slated for LEED certification, their designs will meet most of the applicable criteria of LEED 2009 - New Construction & Renovations.
- b) Since 2012, approximately 90 percent of construction and demolition waste generated by Milwaukee County was diverted from the landfill.
- c) Architectural Services is working with the Focus on Energy (FoE) Design Assistance Program to identify and model energy-saving options for the Central Fleet Maintenance Building Remodeling project. The preferred option would yield annual energy savings of approximately 964 MMBtu or about \$32,000. With FoE incentives, the incremental cost of this option would be recovered in just over three years.

### **2. Resource Management**

- a) At the request of the Office of Sustainability, local non-profit Keep Greater Milwaukee Beautiful completed a trash study at the County Courthouse in February 2014. The study found that approximately 30 percent of trash collected from the building is recyclable. The Office of Sustainability will work with Facilities Services to increase awareness of and support for the Courthouse recycling program.
- b) In summer 2013, the Department of Parks, Recreation & Culture - Natural Areas staff worked with Student Conservation Association volunteers and other community organizations to plant a rain garden and nearly 800 trees at Grant Park.
- c) 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, 2014:  
<http://county.milwaukee.gov/EnvironmentalService23109.htm>
- d) In 2013, the Department of Transportation installed porous pavement shoulders and a gravel wetland along 107<sup>th</sup> Street, also known as County Trunk Highway F. The green infrastructure project, funded in part by the Milwaukee Metropolitan Sewerage District, will cleanse and manage over 35,000 gallons of rainwater.

### 3. Alternative Energy

- a) To date, Milwaukee County has implemented six solar photovoltaic (PV) systems and three solar hot water systems. In total, the nine systems generate about 104,000 kWh of clean, renewable power per year - roughly equivalent to the electricity used to power 10 homes.
- b) As directed by the County Board in January 2014, Airports is making preparations to conduct a solar feasibility study at General Mitchell International Airport (GMIA). In addition, the Office of Sustainability is preparing a report to the County Board for its May 2014 meeting cycle that will outline steps for examining and implementing solar energy opportunities on other County-owned properties.
- c) During 2013, the Milwaukee County Zoo added a number of solar tubes to the train garage and hay barn, increasing the use of natural day lighting in these areas.
- d) Airports continues to add compressed natural gas (CNG) vehicles to the GMIA fleet, which now includes 12 CNG shuttles, two CNG sedans, and one CNG garbage truck. During 2013, Airports saved over \$100,000 by using CNG rather than gasoline. Fuel cost savings allow Airports to recover the \$20,000 incremental cost of a CNG shuttle vs. an unleaded fuel shuttle within three years.

### 4. Education

- a) Milwaukee County's first-ever 'Kill-a-Watt' Challenge to cut electricity use was a success. The County's overall electricity use from May-October 2013 was 2.7 percent less than that of same period in 2012. So the County met Executive Abele's goal of a two percent reduction.

By consuming 1,506,000 kWh less electricity than last year, the County avoided approximately \$128,000 in electricity costs. The electricity use reduction provided an environmental benefit equivalent to:

- Taking 200 cars off the road one year or,
- Preserving eight acres of forest; or,
- Taking 140 homes off the electricity grid for one year.

Winners of the May-October energy conservation program, which was coordinated by the Office of Sustainability, included:

- Biggest reduction in total electricity use: GMIA
- Biggest percentage reduction in electricity use: Research Park
- Overall reduction in electricity use: House of Correction

- b) In October 2013, the Office of Sustainability published the inaugural issue of *Sustainability Update*, an electronic newsletter that promotes Milwaukee County's

environmental stewardship activities. A winter edition was published in January 2014, and the spring 2014 edition will soon be released – to sign up for future issues, visit <http://county.milwaukee.gov/sustain>.

- c) Milwaukee County and the Wisconsin Green Building Alliance are partnering to offer quarterly 'Sustainable Building for Municipalities' workshops in 2014. The first workshop, which covered essential concepts in LEED, was held on February 24, 2014 and was attended by 20 people representing six different governmental organizations.
- d) In fall 2013, the Office of Sustainability reconvened Milwaukee County's Recycling Team and Energy Team. The Recycling Team studies and recommends ways to reduce solid waste and increase reuse and recycling in County facilities. The Energy Team works to improve awareness and management of energy resources used by the County. Both teams meet every other month and new members are always welcome.
- e) The Office of Sustainability is working with the Wellness Committee to plan a 'Bike to Work Day' event in May 2014. The event will likely feature guided bicycle rides to the Courthouse that highlight Milwaukee County's Oak Leaf Trail and the new Kinnickinnic River Trail.
- f) During 2013, a team of Milwaukee County staff quietly logged more than 2,800 miles by bicycle during the National Bike Challenge, a free program intended to get people on their bikes for exercise, fun, transportation, etc. each May-September. In the coming months, the Office of Sustainability and Wellness Program hope to inspire many more County employees to participate with the 2014 National Bike Challenge.
- g) Environmental Services hosted the Southeast Area Land and Water Conservation Association's fall 2013 tour on October 9, 2013. The daylong tour highlighted land and water conservation best practices in Milwaukee County, with stops at Bradford Beach, Three Bridges Park, and the Milwaukee Rotary Centennial Arboretum.
- h) Milwaukee County continues to raise environmental awareness in the community by hosting annual events like the Green Living Festival at Mitchell Park Domes, Earth Day celebration at Wehr Nature Center, and the Zoo's Party for the Planet.

## **5. Staffing / Resources**

- a) In October 2013, Tim Detzer of Environmental Services was hired to the position of Managing Environmental Engineer. Tim previously served as Environmental Engineer since 2000.
- b) In spring 2013, AE & ES hired Bill Banach as its new Principal Architect. A LEED accredited professional, Bill brings over 20 years of architectural experience to the position. Bill has managed and been involved on a wide variety of projects that have

earned LEED certification or that have stringently followed the guidelines associated with LEED and sustainability.

## **6. Energy Efficiency Audits**

- a) Total energy use for all Milwaukee County facilities increased by eight percent from 2012 to 2013. Energy costs were up by four percent. However, adjusted for weather, total energy use was about the same in 2012 and 2013. So, the colder weather had a significant impact on the County's energy use in 2013.
- b) Total electricity use decreased by three percent from 2012 to 2013. The decrease may be partly due to reduced demand for air conditioning. In addition, energy conservation efforts such as the 'Kill-a-Watt' Challenge and ongoing energy efficiency upgrades have helped to reduce power use.
- c) Parks, Recreation & Culture is working with Pepsi to remove lamps from 20 beverage vending machines. By delamping the machines, which run continuously from April-October, the Department will avoid approximately 9,400 kilowatt hours (about \$850) in electricity per year. This provides an environmental benefit equivalent to recycling 2.5 tons of waste or conserving 740 gallons of gasoline.
- d) With support from FoE, Airports recently completed a retro-commissioning (RCx) study that identifies and recommends fixes ('Facility Improvement Measures; FIMs) to issues with GMIA's heating, ventilation, and air conditioning (HVAC) systems. Airports hopes to implement all the FIMs identified in the study, which 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. Procurement**

- a) During 2013, the Zoo replaced approximately 36 inefficient high-pressure sodium and metal halide fixtures with more efficient light-emitting diode (LED) and florescent fixtures. The simple payback for replacing the fixtures is about 1.5 years.
- b) As part of its computer/monitor replacement plan, Airports is upgrading the Flight Information Display System (FIDS) at GMIA. The \$113,000 project is expected to yield energy cost savings of about \$28,000 per year, paying for the FIDS in about four years.