

**August 2007**

## **SHWEC Storm Water Guide Helps Businesses Control Runoff**

*David S. Liebl*

Community storm water management traditionally has emphasized collecting and conveying runoff to the nearest surface water body to prevent local flooding. However, diverting storm water runoff into surface conveyances and streams leads to depleted groundwater aquifers, to the extent that in several areas of Wisconsin (notably Brown and Waukesha Counties) depleted groundwater supply has impacted economic development.



Runoff, additionally, can cause erosion, flooding and the transport of nutrients (phosphorus & nitrogen) to surface waters. Urban runoff contributes significant amounts of toxic chemicals from areal sources and atmospheric deposition (e.g. heavy metals and carcinogens), as well as from petroleum by-products and other industrial chemicals that come in contact with it on commercial and industrial sites.

Wisconsin storm water management regulations (NR 216) require specific industrial sectors to develop storm water pollution prevention plans to minimize these impacts. The regulations, however, do not comprehensively address runoff volume, flows and quality from the majority of existing Wisconsin businesses. Consequently, most commercial and manufacturing businesses have paid little attention to storm water issues. They are ill equipped to respond to demands for improved runoff management, and are unaware of the potential for improving groundwater recharge while minimizing the potential for contamination.

With funding from USEPA Region V, SHWEC developed a self-assessment methodology that uses a multi-media approach to identifying potential sources of runoff contamination, and employs onsite runoff management strategies tailored to each business and site's characteristics.

Here is an example of what can be achieved when commercial businesses adopt a progressive approach to storm water management: The commercial redeveloper of a large commercial parcel with 100% impervious area agreed to additional reductions -beyond local ordinance requirements - in total suspended solids (TSS) in storm water runoff from the site. Incorporating green space and bio-filtration into the project design allowed infiltration of rainfall onsite. Analysis of the potential reductions in pollutant discharge from implementation of these Best Management Practices (BMPs) shows:

### **Current Conditions**

Parcel Size - 3.8 acres  
Permeable Surface - 0%  
Infiltration - 0%  
Removal TSS - 0%

### **Redeveloped Conditions**

Parcel Size - 3.8 acres  
Permeable Surface - 10%  
Infiltration - 50%  
Removal TSS - 80% (40% required)

Based on an areal loading of 241 lbs/acre TSS <sup>†</sup>, this parcel contributes 916 pounds of TSS annually to storm water runoff. The redeveloped site will reduce that loading by 80% to 183lb, with half that reduction (366lb) attributable to implementing recommended BMPs. Over a nominal fifty year project life span, this amounts to about 18,320lb TSS prevented from entering storm water runoff.

SHWEC's *Managing Storm Water Runoff: A Self-Assessment Guide for Businesses*, has been provided to over 250 municipal storm water managers and consultants working to meet Wisconsin's Phase 2 storm water regulations. To obtain a copy, visit the publications section of the SHWEC website: <http://www4.uwm.edu//shwec/> . For more information on UW-Extension programs for storm water runoff visit: <http://runoffinfo.uwex.edu> .

† (*Source Area and Regional Storm Water Treatment Practices: Options for Achieving Phase II Retrofit Requirements in Wisconsin*, Bannerman, ET AL 2003)



## Compost Improves Storm Water Management and Erosion Control on Roadsides

Joe Van Rossum

Storm water runoff is an issue everywhere, especially when land is disturbed during construction. Over the past several years, interest in using the benefits of compost to reduce soil erosion and to improve storm water runoff quality has grown.

The Associated Recyclers of Wisconsin (AROW), Recycling Connections Corporation, US EPA, White Oak Farm, and Wisconsin Department of Natural Resources have developed a one-day session that will introduce highway designers, maintenance personnel, storm water management specialists, and composters to best management practices (BMP) that use compost to reduce storm water runoff, and improve its quality. Join us for this one-day roundtable and demonstration of compost storm water BMPs in Waukesha, WI on September 13, 2007. Space is limited, register soon. Registration information can be found online at: <http://www.arow-online.org/PDF/compost%20round%20table%20flyer%20front%20and%20back-web.pdf> or call AROW at 715-343-6311

## Storm Water Management using Rain Gardens

A key strategy for reducing the impact of storm water is the use of rain gardens, which reduce runoff by allowing increased infiltration of storm water. To further the development of rain gardens, the Milwaukee Metropolitan Sewerage District (MMSD) has developed a Lake Michigan initiative. Shirley Krug, MMSD Project Manager, recently described the program: "Rain gardens help protect the health of our rivers and Lake Michigan by capturing storm water and draining it into the ground instead of allowing it to flow into sewers or become polluted runoff. Rain gardens are nature's way of helping to correct man-made problems like sewer overflows and polluted runoff. We're spending a ton of money to reduce sewer overflows. If we really want to improve our rivers and lakes, we need to do something to reduce the amount of storm water pollution that flows into waterways every time it rains."

**What is the Lake Michigan Rain Gardens Initiative?**

An initiative aimed at increasing the number of Rain Gardens in Milwaukee County/MMSD Service area by offering greatly reduced-cost plants to eligible groups and homeowners.

**What is a Rain Garden?**

Rain gardens are slightly sunken, native-plant gardens that collect rainwater from a roof, allowing the rain to soak into the ground. They protect our rivers and Lake Michigan by reducing polluted stormwater runoff and the amount of water that gets into the sewer system.

**Interested Groups or Homeowners**

only need to fill out and submit the short application form posted on MMSD's website at [www.mmsd.com/raingardens](http://www.mmsd.com/raingardens) by January 14th, 2008.

If you have questions or need more information, please call 414-225-2070 or email [raingardens@mmsd.com](mailto:raingardens@mmsd.com)

Above and beyond the water quality benefits, rain gardens add beauty to neighborhoods and they attract birds, butterflies, and wildlife. More than 50 species of native plants, that have deep roots to help the rain garden absorb much more water than your typical lawn, are available.

**Program Details** - Interested parties need to fill out and submit a short application form by January 14, 2008. The form can be found on MMSD's web site at [www.mmsd.com/raingardens](http://www.mmsd.com/raingardens). Applications will also be mailed upon request. Individuals who need a hard copy may call 414-225-2070. A list of available plants and delivery information can be found on the MMSD web site.

**Who Can Apply?** - Residents, groups and units of government within Milwaukee County and the cities of Brookfield, Mequon, Muskego, and New Berlin and the villages of Butler, Elm Grove, Germantown, Menomonee Falls, Thiensville and Caledonia.

**Plant Prices** - For every 2.5 inch plant purchased at \$3.60, eligible applicants will receive a second plant for free, about a 50% discount compared to retail prices."

Finally, the MMSD is encouraging others to help promote rain garden development by calling 414-225-2070 to request handouts or posters. For more info on MMSD rain garden initiative, contact Shirley Krug at [skrug@mmsd.com](mailto:skrug@mmsd.com).

## **Recycling Managers Corner Created**

*Joe Van Rossum*

A resource for recycling program managers has been introduced on SHWEC's web site. "Recycling Managers Corner" is designed to serve as a clearinghouse for information related to regulations, grants and composting. It features information sources related to recycling and solid waste.

Recycling Managers Corner also has a direct link to SHWEC's Brochure Creation tool, a web-based application that enables the user to create a customized recycling brochure with information about their local recycling program.

<http://www4.uwm.edu//shwec/e-courses/RecyclingManagersCorner.cfm>

## *Environmental News Briefs of Interest .....*

### **Green Electronics Council Report: Environmental Benefits from Green Computers**

The first annual report released by the EPA and the Green Electronics Council highlights numerous environmental benefits of buying high-performance, environmentally friendly computer equipment. The report, called "The Environmental Benefits of the Purchase or Sale of EPEAT Registered Products in 2006," states that the purchase of more than 36 million EPA approved computer desktops, laptops and monitors has led to a significant reduction in greenhouse gas emissions. According to the 2006 Report (published July 2007) the computer equipment has helped to:

- Save 13.7 billion kWh of electricity
- Save 24.4 million metric tons of primary materials
- Prevent 56.5 million metric tons of air emissions (including greenhouse gas emissions)
- Prevent 1.07 million metric tons of carbon equivalent greenhouse gas emissions
- Prevent 118,000 metric tons of water pollutant emissions
- Reduce the amount of toxic materials used by 1,070 metric tons
- Avoid the disposal of 41,100 metric tons of hazardous waste

The savings calculations were based on sales of computers registered in the EPEAT Program and used the University of Tennessee Center for Clean Products first version of the Electronics Environmental Benefits Calculator (EEBC) which allows purchasers to determine the environmental benefits of EPEAT registered computers and monitors. <http://eerc.ra.utk.edu/ccpct/eebc/eebc.html>

EPEAT (Electronic Products Environmental Assessment Tool) -registered computer products have reduced levels of cadmium, lead, and mercury to better protect human health, and are easier to upgrade and recycle, in addition to meeting the government's Energy Star guidelines for energy efficiency. For more information about EPEAT and the annual report:

<http://www.epa.gov/opptintr/epp/pubs/products/epeat.htm>

### **EPA's New Go Green! Newsletter Helps Consumers Make a Difference**

America is shifting to a "green culture" in which all 300 million citizens are embracing the fact that environmental stewardship is everyone's responsibility. As a step in that direction, citizen environmental partners can sign up to receive EPA's new consumer newsletter, Go Green! EPA is launching this monthly, email newsletter to provide "what you can do" information on activities and events that everyone can use to make a difference just about anywhere - in homes, workplaces, schools and communities.

The newsletter will include information on such issues as how to calculate individual energy use, upcoming environmental activities and observances and recent news reports from EPA. To subscribe to the Go Green! Newsletter by email, register at

[http://service.govdelivery.com/service/subscribe.html?code=USAEPA\\_298](http://service.govdelivery.com/service/subscribe.html?code=USAEPA_298)

For general information about Go Green! <http://www.epa.gov/newsroom/gogreen>

### **EPA Launches New Tribal Portal Website**

The Environmental Protection Agency announced a new web site at the National Tribal Operations Committee (NTOC) meeting in Washington, DC last week. Established in 1994, the NTOC comprises 19 tribal leaders and senior Agency leaders, and meets once a year to discuss implementation of tribal environmental protection programs. Currently, there are approximately 560 separate, federally-recognized tribal governments in the United States. The new cross-agency website allows EPA to consolidate and share environmental information reflecting the tribal community perspective and needs into a central, easy-to-navigate structure. Various EPA programs, such as enforcement, waste, underground storage tanks and water, are also consolidating their tribal information through this website. Visit the tribal portal at:

<http://www.epa.gov/tribalportal>



### **Energy Star Homes Account for More Than 12% of New Housing Construction in 15 States**

In 2006, the percentage of newly constructed single family homes earning the government's Energy Star exceeded 12 percent in 15 states: Alaska, Arizona, California, Connecticut, Delaware, Hawaii, Iowa, Nevada, New Hampshire, New Jersey, New York, Ohio, Texas, Utah and Vermont.

Nearly 200,000 new homes nationwide earned the Energy Star in 2006, bringing the total number of Energy Star qualified homes across the nation to almost 750,000. To date, these homes have locked in annual savings of more than \$180 million for homeowners by saving over 1 billion kWh of electricity and 100 million therms of natural gas.

To earn the Energy Star, homes must be independently verified as meeting EPA's strict guidelines for energy efficiency. These homes are least 15 percent more energy efficient than homes built to the 2004 International Residential Code, and include additional energy-saving features that typically make them 20 to 30 percent more efficient than standard homes. For more information:

<http://www.energystar.gov/homesindex>

## *Events, Training, Workshop and Tour Opportunities .....*

August 8, 2007 **Resource Management Contracting Webcast**, 1 p.m Central Time. Learn how to get the most from waste and recycling contracts by creating performance based contracts that tie financial incentives to measurable goals. Presented by WasteCap Nebraska with funding from Nebraska Dept of Environmental Quality in partnership with US EPA Region VII. Online registration is available at <http://www.wastecapne.org/pub/2007/summer-lecture-series/3-resource-management.shtml>

September 12-14, 2007 **Greening the Heartland/SE2 Conference and Trade Show**, Monona Terrace, Madison. For more information contact the Wisconsin Green Building Alliance at <http://www.wgba.org>

September 25, 2007 **Hazardous Material and Waste Disposal Awareness Training**, Best Western Grand Seasons Resort, Waupaca. Training provided by Veolia Environmental Services and jointly sponsored by the Northeast Wisconsin Cooperative Marketing Group (NEWCMG) and the Associated Recyclers of Wisconsin (AROW) Hazardous and Special Waste Working Group. For more information go to [www.arow-online.org](http://www.arow-online.org).

September 26- 27, 2007, **11th Annual Conference on Comprehensive Solid Waste Management Solutions**, Best Western Grand Seasons Resort, Waupaca. Agenda topics include pharmaceuticals, event recycling, ag plastics recycling, product stewardship, flow control and more! Conference jointly sponsored by the Northeast Wisconsin Cooperative Marketing Group (NEWCMG) and Wisconsin Counties Solid Waste Management Association (WCSWMA). For more information or to register (by Sept. 14 please), contact Manitowoc County at (920) 683-5031.

Nov. 7-9, 2007 **Greenbuild Chicago**. Annual U.S. Green Building Council's Conference and Expo. This year's theme is Accelerating Green Communities. For information and to register go to <http://www.greenbuildexpo.org>.