

MUNICIPAL News



August 2011

WATER, WASTEWATER, TRANSPORTATION AND MUNICIPAL SPECIALISTS

WHAT IS A RAIN GARDEN?

A rain garden is a landscaped, shallow depression that captures rain and snowmelt (stormwater runoff) before it can reach a storm sewer, nearby lake, stream, pond, river or wetland. Rain gardens typically are designed to intercept runoff from impervious surfaces.

HOW DOES A RAIN GARDEN WORK?

During heavy rains, water washes down storm drains from streets, rooftops, lawns, and parking lots. Once in the storm drain it eventually ends up in local waterways. Unseen pollutants such as pesticides, fertilizers, and petrochemicals which may have accumulated on streets and in lawns are often washed into local waterways. A rain garden's depression captures stormwater allowing it to percolate into the ground instead of pouring into the storm drain. As this captured water slowly seeps into the ground, pollutants are filtered out naturally by the plants and soil and recharges the groundwater table.

WHAT ARE THE BENEFITS OF A RAIN GARDEN?

- Reduces pollution to lakes, rivers, and streams
- Reduces flooding and erosion
- Recharges the groundwater
- Improves water quality for fish and other aquatic life
- Attracts birds and butterflies
- Beautifies the landscape
- Is a stormwater BMP that can help communities meet their stormwater permit requirements.

WHERE CAN I GET MORE INFORMATION

Contact Tom Ganfield at 815.459.1260 or visit the University of Wisconsin Cooperative Extension for *Home and Garden Clean Water Practices Fact Sheets*:

Rain Gardens: A Household Way to Improve Water Quality in Your Community <http://bit.ly/nXSIHe>

Rain Gardens: A How-To Manual for Homeowners <http://bit.ly/qMjN80>

ARTICLES

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Case Study

Hammond, IN

Sustainability Takes Root at Baxter & Woodman!



The Baxter & Woodman Sustainability Committee facilitated installation of rain gardens at two B&W office locations. After careful planning, site and plant selection, B&W staff rolled up their sleeves and dug in!

Visit <http://bit.ly/nZJDX1> and <http://bit.ly/ntRh3c> to see videos of the rain garden plantings in action. Ever considered a rain garden in your own community? Sustainable Thinking. Let it grow on you. It is growing here at B&W!



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Emergency Response

A quick response in a critical time can make all the difference in the world!

COUNT ON US!

When your community's drinking water supply or wastewater treatment process is jeopardized, minutes count. On July 1, 2011, two Baxter & Woodman clients encountered challenging situations due to weather and equipment failure. B&W responded immediately to help these clients reinstate their services and get processes back up and running as usual. These are their stories....

Waukegan, Illinois

WEATHER REPORT JUNE 30TH, 2011

Severe thunderstorms moved south down Lake Michigan bringing high winds, large hail and heavy rain. Heavy damage was reported along the lake shore in northeast Lake County. A wind gust of 94 mph was reported at Waukegan Harbor.

The Waukegan Water Plant sustained a direct hit from severe storms. When the winds died down, Waukegan public works staff discovered damage to the roof of one of the water plant control buildings and the cover for the clear well. At first light, B&W's John Szwedo (aware of how damaging these storms were to the area since he resides in nearby Kenosha) set out for Waukegan to check on the facility. It was about this time that a call came in to B&W from Waukegan's Director of Public Works requesting operational and control assistance quickly. John was already on the way.

Once at Waukegan, John assessed the damage. The roof was partially torn off one building, and the cover for a clear well was completely torn off as well. Part of the SCADA system didn't work, and the security system was not operational. Waukegan staff temporarily tarped the roof that had been torn off while John dispatched other B&W staff members to assist with repairs to the SCADA system. Once the temporary tarp was put in place to protect the plant from further wind/rain damage, John and the staff built a temporary cover for the clear well.

By noon the SCADA system, along with the security system, was repaired and operational. John assisted staff with the final repairs to the clear well cover and then remained onsite for the rest of the day to ensure everything else was in order.



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"Baxter & Woodman's speedy response helped us **quickly assess the situation** and **formulate a gameplan** to get the plant operational as soon as possible to maintain a safe drinking water supply for our residents."

Tom Hagerty

City of Waukegan

Director of Public Works

Wood Dale, Illinois

The City of Wood Dale's wastewater treatment plant aeration system was not functioning due to pipe breaks. Without aeration feeding their system, it would become non-operational. The timeline below shows how the City, B&W and a local contractor pulled together to fix the pipe breaks and maintain aeration at the plant so the situation did not become critical.

06/30/2011

7:30 AM City staff discover an air line leaking. They divert flow and utilize excess flow tanks while repairs are made. The City uses concrete to repair the hole and completes the repairs by 5:00pm that same day.

07/01/2011

4:00 AM City staff reintroduces air into the line and another section of the line fails. Director of Public Works, John Kramer calls Baxter & Woodman requesting assistance.

6:00 AM B&W immediately contacts a contractor working on another B&W project at the nearby Itasca WWTP. B&W explains the situation at Wood Dale and requests Geoff Stocks of Williams Brothers Construction, Inc. take Jim Wendt from Tobin Brothers (Mechanical Contractor) to the Wood Dale plant and start making plans to install temporary piping above ground. They quickly agree to help.

7:00 AM Baxter & Woodman Resident Project Representative Jeremy Norton arrives on site to find the contractors on site and preparations for repairs underway.

7:00 AM – 11:00 AM The vertical steel pipe in the blower room is cut off and a flange is welded on. The existing air line is uncovered just upstream of the first aeration tank tee. The spigot side of the pipe appears to be in better condition than the bell side of the joint. The south exterior wall of the Blower Room is knocked out for the temporary piping to pass through.

11:00 AM-11:30 AM City staff discusses options with B&W and the contractor. The City hopes to install all new temporary air lines that day, but this approach is not feasible. The best option appears to be installing a new 24" ductile iron pipe above

"The **quick response** by Baxter & Woodman and the contractor was key to avoiding any interruptions to our wastewater services. B&W, the contractor, and the City worked tirelessly from sunup until after sundown to repair the system. **Great teamwork!**"

John Kramer

City of Wood Dale Director of Public Works

ground to where the existing pipe was exposed and connecting to the existing pipe. The rest of the temporary piping would be installed in the coming weeks. The City agrees with this plan and authorizes the work to proceed.

11:30 AM-9:00 PM Material arrives on site throughout the day. Approximately 60' of 24" pipe is run east into a 90° bend and another 60' of pipe is run south from there to a set of 90° bends. The connection to the existing pipe is made using the bottom 90° bend. Air compressors are connected to the tank air lines by way of the blow off lines to keep some air flowing throughout the repair process.

9:00 PM Air is re-introduced to the new and existing lines slowly by starting one of the small blowers first. The existing pipe has small leaks but holds up against the air pressure. An additional blower is started with no problems.

7/1/2011 – 8/1/2011

The City installs new ductile iron temporary piping to all of the tanks. None of the original ductile iron piping remains in use today.





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 Permit No. 345



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LEDS OFFER ENERGY AND COST SAVINGS



Night-time illumination of streets, bike paths and parking areas is a universal community need that requires manpower and dollars for installation, maintenance, and operation. Traditionally, high pressure sodium (HPS) and metal halide (MH) streetlights were installed to meet this need. Facing limited maintenance and operation budgets, more and more communities are looking to Light Emitting Diode (LED) technology for their lighting needs.

Advances in LED lighting technology are creating a viable option to HPS and MH streetlights. High-power LED streetlights are becoming available to meet desired street lighting properties. Additionally, LEDs use significantly less wattage than HPS streetlights to produce the same light output. LEDs last longer than HPS fixtures, cost less to operate, and cost less to maintain over their life span.

For more information contact Lou Haussmann at 708.478.2090 or check out this edition's *Case Study* to learn how Hammond, IN installed LEDs to save money and the environment.

LED STREET LIGHTING SAVES ENERGY

HAMMOND, IN

The City of Hammond recently reconstructed Davis Street on the north side of town, as part of their 2010/2011 1st District Infrastructure Improvement Initiative. As part of this project, the City installed a new street lighting system with 16 ornamental pole and fixture light assemblies. These assemblies were fitted with Light Emitting Diodes (LED) instead of the City's standard High Pressure Sodium (HPS) drivers.

By utilizing LED assemblies instead of HPS assemblies, the City has cut their energy consumption by 40%. See chart below for details:

ENERGY CONSUMPTION - HPS VS LED ASSEMBLIES

ASSEMBLY	WATTS	BURNING HOURS	KWH PER YEAR
LED	116	5,000	9,280
HPS	185	5,000	14,800
SAVINGS			5,520

BENEFITS OF USING LED LIGHTING ON DAVIS STREET INCLUDE:

- Energy consumption reduction by approx. 40%
- Carbon emissions reduction by 3.6 metric tons
- 50,000+ hour life of LED reduces maintenance
- Improved visual clarity due to whiter light and higher color rendering index of LED's

Due to the energy savings experienced on Davis Street, the City plans to evaluate LED technology for additional streetlight applications within the City.

Interested in seeing the Davis Street LEDs in action?

Visit <http://bit.ly/ngdaad> to view our YouTube posted



video. LEDs save energy, money, and are better for the environment...Now that's a bright idea! Way to GO HAMMOND!

