

## Milwaukee's Green Stormwater Mandate



**Wisconsin water officials passed a pollution permit requiring the Milwaukee area to develop one million gallons of green stormwater capacity annually for the next five years. The Milwaukee Metropolitan Sewerage District (MMSD) has been sponsoring the installation of area green roofs for nearly a decade, including this planting at the Aquatics Unlimited store in Greenfield, Wisconsin in December 2010.**

The Milwaukee area will be the first in the nation to mandate "green infrastructure" to contain and manage stormwater.

The Wisconsin Department of Natural Resources (DNR) issued a new five-year wastewater discharge permit in January requiring the Milwaukee Metropolitan Sewerage District (MMSD) to establish one million gallons of green stormwater storage capacity each year. Sewer pipes, bedrock tunnels and concrete reservoirs cannot be used to meet the mandate.

The district will have to install a variety of stormwater management tools throughout the area to keep up with the rising mandate, offering potential work to area landscape designers and contractors. Green infrastructure can include plantings and soil, rain barrels, green roofs, rain gardens and bioswales, or permeable pavement. The district will also work to conserve and protect area wetlands.

Green infrastructure will reduce runoff to the sewer system, cutting potential overflows into waterways or basements, DNR and district officials said.

The district must work with municipalities and private property owners to achieve 250,000 gallons of other green storage each year. The mandate requires that no more than 75 percent of the one million gallons yearly total can come from new purchases of wetlands or floodplains under the permit.

A green roof or rain garden can capture up to 3 gallons of rain per square foot. One rain barrel holds 55 gallons.

## **First Wastewater Discharge Permit to Require “Green” Implements**

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The Milwaukee Metropolitan Sewerage District (MMSD) has been granted the first wastewater discharge permit in the nation, mandating ‘green infrastructure’ to collect and absorb stormwater. MMSD is obliged to accumulate one million gallons of stormwater each year. Sewer pipes, bedrock tunnels and concrete reservoirs, however, cannot be used to meet the requirement. Therefore, the one million gallons of stormwater must be collected solely through the use of “green” implements; namely, through the use of plants, soil and rain barrels.

More rooftops in the Milwaukee area will be enlisted to grow grasses, flowers, and other plants. Apart from constructing green roofs, the choices include planting rain gardens at the ends of downspouts, installing porous pavement in parking lots to allow stormwater to seep into the ground, creating landscaped swales on the sides of streets, and protecting wetlands and floodplains.

Buying an acre of open space in a wetland or in a river's floodplain as part of the district's Greenseams conservation program adds between 65,000 and 651,000 gallons of stormwater storage, depending on soil. However, no more than seventy-five percent of the one million gallons each year can come from new purchases of wetlands or floodplains. The district must work with municipalities and private property owners to achieve 250,000 gallons of other green storage each year.

A green roof or rain garden, for example, can capture up to three gallons of rain per square foot. One rain barrel holds 55 gallons.