



GREENSEAMS PROGRAM WORKHORSE WETLAND FUNCTION  
FLOOD & STORMWATER ATTENUATION

MMSD

MILWAUKEE/WAUKESHA/  
OZAUKEE/WASHINGTON  
COUNTY



# MMSD GREENSEAMS PROGRAM

Property Owner: Milwaukee Metropolitan Sewerage District  
Wetland Types Present: marsh, sedge meadow,  
floodplain forest

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## WETLANDS STORE RUNOFF & REDUCE FLOOD DAMAGES

Flooding is a human health and safety issue with significant economic impact. Wisconsin Emergency Management calls the June 2008 flooding the most costly natural disaster in Wisconsin's recorded history, citing hundreds of millions of dollars in damages to homes and businesses. Wetlands are a critical component of the long-term solution to flooding. Often likened to sponges and dubbed "nature's hazard insurance," wetlands store rain that runs off of our lands, slowly releasing it to the atmosphere, groundwater and adjacent lakes, rivers and streams. Because of their storage capacity, and the fact that wetland vegetation helps slow the speed of flood waters, wetlands can help reduce the severity of floods and associated damages in downstream areas. This wetland function is particularly important in urban and suburban areas where pavement creates fast-flowing runoff.

But not all wetlands are equal. Several factors affect the contribution of a given wetland to reducing downstream flooding during a given storm, including wetland size, position within the watershed, topography, vegetation and how full the wetland was preceding the rainfall. Nevertheless, watershed-wide wetland protection, including protection of isolated wetlands and floodplain wetlands, is needed to maximize the flood attenuation function of wetlands. Removal of homes and other structures from floodplains is one of the most effective ways to reduce the economic damages of floods. Restoring natural floodplain topography and wetland vegetation following removal of structures provides flood reduction benefits to areas downstream.



Breaking drain tile for wetland restoration — MMSD

## GREENSEAMS & PREVENTING FLOOD DAMAGES

The Greenseams Program, an innovative flood management project of the Milwaukee Metropolitan Sewerage District (MMSD), comprises many acres of wetlands throughout the Greater Milwaukee area. Greenseams permanently protects key undeveloped lands in the region's urbanizing watersheds in order to reduce future flooding risks and damages. After the program's inception in 2001, a total of 29,000 acres of wetlands and other areas with water storage capacity within four counties and four watersheds were identified as prospects for acquisition. As of spring 2009, Greenseams had protected 1,881 acres of mature forests, stream corridors, and most importantly, wetlands. Greenseams has completed restoration work on a number of these areas to restore natural hydrology and maximize the capacity to retain runoff following rain events. The Greenseams Program estimates that the 1,287 acres of hydric (wetland) soils that they have protected can hold more than 830 million gallons of water! These wetland acres are hard at work reducing flood risks and damages for the 1.1 million residents and 28 communities in Greater Milwaukee area.

## ACCESS

Visit the Greenseams website: [v3.mmsd.com/Greenseams.aspx](http://v3.mmsd.com/Greenseams.aspx).

## OTHER EXAMPLES OF THE FLOOD ATTENUATION VALUE OF WETLANDS

All wetlands store water, and thus all wetlands contribute to flood attenuation. The Wetlands Reserve Program ([www.wi.nrcs.usda.gov/programs/wrp.html](http://www.wi.nrcs.usda.gov/programs/wrp.html)) has made possible several large wetland restoration projects that provide significant amounts of water storage including the Baraboo River Waterfowl Production Area in Columbia County and Duffy's Marsh in Marquette County.

## Sources:

Milwaukee Metropolitan Sewerage District Greenseams Program  
Wisconsin Emergency Management  
Wisconsin Department of Natural Resources: Wetland Functional Values  
USEPA Watershed Academy Web Module: Wetlands Functions and Values  
Wetland Functions, Values, and Assessment. USGS Water Supply Paper 2425  
Ramsar International Convention on Wetlands Fact Sheet Series: Shoreline  
Stabilization and Storm Protection: Flood Control