

Water Pro

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...And More!

Information for professionals working with water issues.

The Latest in Low Impact Development: Engineering and Landscape Design

National expert Larry Coffman, best known for his pioneering stormwater management work, headlines a March 21 workshop titled “The Latest in Low Impact Development: Engineering and Landscape Design.”

Commissioner Sheryl Corrigan of the Minnesota Pollution Control Agency will give opening remarks.

Minnehaha Creek Watershed District (MCWD) partnered with the Minnesota Landscape Arboretum’s Public Policy Program and the Minnesota Nursery and Landscape Association to sponsor the course, which will be held at the Arboretum.

“This workshop is part of an ongoing effort to promote Low Impact Development in our district and the Twin Cities region,” said Eric Evenson, MCWD Administrator. “We encourage local officials, planners, engineers, public works directors, stormwater managers, developers, builders, and landscape professionals to attend.”

LID describes a comprehensive array of planning, design, and stormwater management strategies that create a more economically sustainable and ecologically functional urban landscape. Learn

more in the Fall 2005 *WaterPro*, and in ‘LID Corner,’ Page 2 of this issue.

Workshop attendees will gain an understanding of how to apply integrated management practices to meet local watershed protection goals and regulatory requirements.

About the Presenter

Author of numerous papers and articles on stormwater management, Larry Coffman gained prominence in the mid 1980s when he served as Associate Director of the Prince George’s County, Maryland Department of Environmental Resources. There he

was responsible for the oversight of numerous County programs, including National Pollutant Discharge Elimination System compliance and stormwater management, and gained acclaim for his pioneering work in bioretention.

Coffman currently operates a consulting firm specializing in Low Impact Development technologies, training and education.

Conference Overview

- Beyond Rain Gardens: LID principles and techniques
- Maintenance and cost issues
- Case studies: new development, redevelopment, urban retrofit
- Hydrology and hydraulics, modeling and monitoring
- LID and NPDES Regulations
- Policy implications for LID

Registration Information

Workshop materials will be mailed to local officials and professionals.

Download a registration form and detailed conference agenda at www.minnehahacreek.org/lid.php.

To register, call the Arboretum at 952.443.1422.



LID expert Larry Coffman will lead a District-sponsored Low Impact Development workshop at the MN Landscape Arboretum March 21.

NEW STORMWATER MANUAL A STATE RESOURCE

Stormwater managers have a new tool in their toolbox. The Minnesota Stormwater Manual, released in December on the Minnesota Pollution Control Agency (MPCA) website, focuses on managing stormwater in urban and urbanizing areas.

Written for the Minnesota Stormwater Steering Committee (SSC), the manual provides guidance for stormwater managers. It promotes a 'treatment train' approach to integrated stormwater management, and represents a gradual shift away from traditional structural approaches.

"This approach will actually be easier on engineers because we are dealing with stormwater at the site design level instead of putting it all into pipes and ponds," said Gary Oberts of Emmons and Olivier Resources (EOR). EOR, along with the Center for Watershed Protection, was contracted to write the manual.

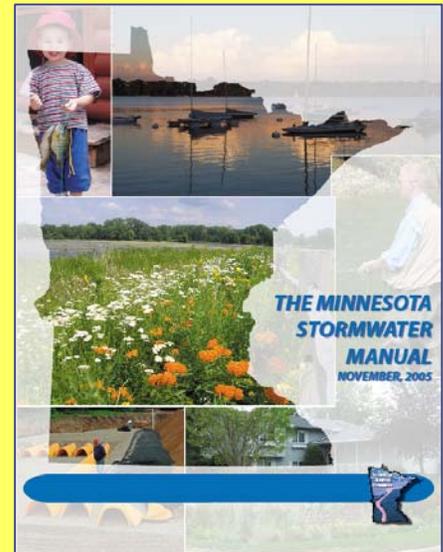
The manual also features discussions on cold climate, snow management, and Best Management Practice (BMP) adaptations for cold climates; mosquito control; potential stormwater 'hotspots'; an updated regulatory 'road map' and permitting work-

sheets; 'unified sizing' criteria for stormwater management; stormwater credits; detailed CADD drawings for specific BMPs, and much more.

"This is a comprehensive guidance document that assembles stormwater resources in one place," said Oberts. "And we've built it as a living, breathing document: MPCA intends to continually update it as new information comes available." People using the manual can register to get updated versions as changes are made.

The Minnesota Stormwater Manual does not establish new regulatory guidelines or supersede old ones. It does, however, recommend a number of future revisions and updates to stormwater rules and technical documents such as TP-40, the worksheet used to calculate sizes of various storm events.

The SSC is a collaboration of state agencies, local governments, businesses, and a variety of environmental, educational, and water-protection groups. It had its genesis with the Stormwater Design Team, which formed in 2003. The Team requested a state-sponsored manual to guide practitioners through a compli-



The new Minnesota Stormwater Manual is available as a series of free PDF documents, online at <http://www.pca.state.mn.us/water/stormwater/stormwater-manual.html>.

To get a free CD containing the manual, call the PCA at 651.297.8363.

cated stormwater management program in the state. A sub-committee oversaw preparation of the manual, which reflects extensive public input and stakeholder comments.

LID CORNER: A comprehensive approach

Welcome to LID Corner, WaterPro's new regular space featuring Low Impact Development (LID) topics and practices. In this issue, we expand on the philosophy behind LID.

Low Impact Development (LID) can be described as a comprehensive approach rather than a technique. The idea behind LID is to develop a site so that post-development runoff conditions mimic pre-settlement runoff. "The premise of LID is that stormwater management should not be seen as stormwater disposal," says Larry Coffman, who leads a MCWD-sponsored LID workshop March 21 (see page 1).

LID employs a varied suite of landscape features known as Integrated Management Practices (IMPs). IMPs range from open space preservation to biofiltration, from underground parking lot storage to tree box planters. While LID relies in part on infiltration, there's much more to it, according to Jay Riggs, Administrator for the Washington Conservation District and local LID expert. "Just because a site has some innovative stormwater management features, it's not a LID site unless it mimics pre-settlement hydrology," he said.

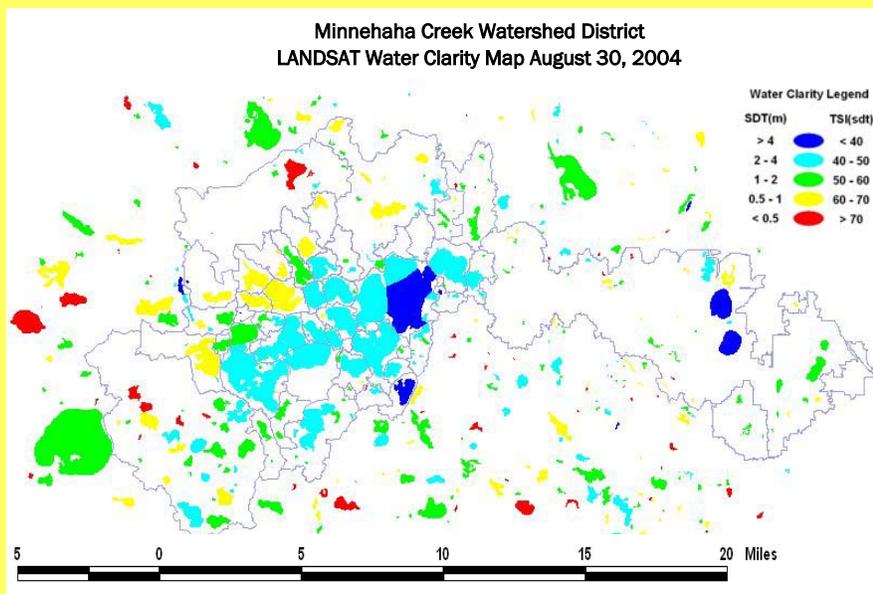
"The key distinction of LID from other strategies is that it's an ecosystem based approach," said Coffman. "LID seeks to design the built environment so that it remains a functioning part of an ecosystem rather than existing apart from it."

NEW online! A Low Impact Development web page featuring links to LID resources, including design manuals with specific details on performance standards and sizing for LID practices.

Visit

www.minnehahacreek.org/lid.php

SATELLITES EXPAND LAKE MONITORING REACH



A view from space. District water clarity in 2004, as estimated from LANDSAT satellite images. See <http://www.minnehahacreek.org/satellite.php> to view data from other years and see progression over time.

Using remote sensing, an innovative method of estimating water quality from space, U of M researchers Marvin Bauer and Leif Olmanson recently compiled more than 30 years of water quality data for 300 small lakes in the MCWD.

MCWD asked the University of Minnesota research team to evaluate a technique the team originally developed for lakes larger than 20 acres in size. The district wanted to know whether the technique could be used for smaller water bodies, especially those within the Minnehaha Creek watershed.

Remote sensing methods gather data about the physical world from earth photographs taken by LANDSAT satellites.

Lakes with high amounts of algae (and low water clarity) have different optical properties than those with little algae. Satellite photos captured these properties. Bauer and Olmanson developed an

analytical model, based on actual lake clarity measurements from hundreds of lakes throughout Minnesota, that accurately predicted water clarity based on the properties seen in the photos.

In the MCWD-funded project, Bauer and Olmanson analyzed old LANDSAT photos to estimate water quality for smaller lakes. They found they could confidently predict water clarity in lakes as small as 10 acres in size using 1973-1976 satellite images, and as small as 5 acres in size using 1991-2004 images. (Recent satellites offer improved spectral resolution.)

MCWD Limnologist Lorin Hatch said data developed through the project represents a leap forward in the district's water quality program. "Using conventional monitoring methods, which are costly and time consuming, we can collect water quality data for about 50 sites on 30 lakes each year.

Lake Minnetonka, alone, requires nearly two dozen monitoring sites," he explained.

The new research provides good data on 50 additional lakes from the 1970s and 150 additional lakes from the 1990s to present. This new method of looking at smaller lakes represents a doubling of the number of lakes compared to the old satellite method. "This expansion of our monitoring abilities is significant because smaller waterbodies provide significant recreational opportunities, but we have little water quality information about them," Hatch said.

In the near future, MCWD will be examining water clarity changes over the 1973 to 2004 period. This will give insight into whether or not these lakes are improving, degrading, or staying about the same.

Correction: City of Orono Wetland Buffer Ordinance applies to lakeshores and wetlands

An article in the 2005 *WaterPro*, "City of Orono Protects Wetland Riparian Buffers," incorrectly characterized that city's buffer ordinance. The ordinance applies to wetlands and lakeshores where wetlands are present. It does not apply to streams and rivers.

The ordinance requires property owners to leave undisturbed or create native plant buffers around the perimeter of wetlands when a property is developed or redeveloped. The width of the required buffer ranges from 15 to 50 feet and is dependent on the wetland's 'Protection Classification' based on its susceptibility to stormwater impacts.

The Code also prohibits most structures and facilities for an added 20 feet – an area identified as buffer setback, allowing for the maintenance of a mowed yard adjacent to the buffer, which is typically not mowed.

Our apologies for the error.

District prepares to unroll watershed management plan

AT MINNEHAHA CREEK WATERSHED DISTRICT

Watershed District purchases 36-acre farm

MCWD recently purchased a 36-acre farm in Minnetrista with hopes to restore 80% of the property and allow 3 homes. If approved by the city, this approach will 'recycle' District funds to make future land conservation projects possible. To learn more, see <http://www.minnehahacreek.org/documents/060109johnsonpressrelease.pdf>

MCWD Finalizing Plans

Over the past year, Minnehaha Creek Watershed District (MCWD) has been writing its comprehensive watershed management plan. The plan is nearly complete, and official review is set to begin in the next few months. View draft chapters of the plan on our website, www.minnehahacreek.org, and submit early electronic comments. Cities are particularly encouraged to submit comments early.

"We're looking for suggestions about potential wetland restoration, flood control, and water quality improvement projects," said Mike Wyatt, District Planner. "The plan will guide the MCWD's activities for the next ten years, so public comments will have a long-term impact."

Wojtysiak Joins District as Compliance Officer



Minnesota is Charly Wojtysiak's chosen home. Although she was raised in New York's Adirondak Park and earned her BS degree in Natural Resources Management from Cornell University, an early job brought her to the Midwest, and life in San Diego confirmed her desire to live in the Twin Cities.

While attending Cornell, Charly worked in the Forestry and Wetlands Research Laboratory. Following graduation, she moved to Minneapolis for a job as an Air Analyst, then left the state when her husband was offered a job in San Diego. There Charly eventually found a position working in storm water management, but said she soon found herself missing Minnesota. "We realized there

really is something to 'Minnesota nice,'" she said, "and decided that Minneapolis is where we wanted to settle."

Charly is the District's lead contact for enforcement activities. She replaces James Wisker, who was promoted to permitting officer. Charly's last name is pronounced 'Why-tish-ok.'

Don't Forget!
 The Latest in Low Impact Development...
 March 21, 2006
 Minnesota Landscape Arboretum,
 Chanhassen
 Brought to you by
 Minnehaha Creek Watershed District,
 MN Landscape Arboretum
 Public Policy Program,
 & MN Nursery and Landscape Association
 For more info:
www.minnehahacreek.org/lid



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