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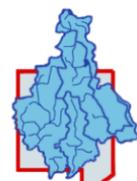
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DuPage River Salt Creek Workgroup
10S404 Knoch Knolls Road
Naperville, IL 60565

Letter from the President

Dear Members,

Welcome to our latest edition of the DRSCW newsletter. Within this edition, you will find articles featuring developments in winter de-icing equipment, information on the new MS4 Storm Water General Permit Green Infrastructure provisions, an update on the Churchill Woods Dam removal project, and a short piece highlighting our role in the relocation and expansion of The Village of Itasca's wastewater treatment plant. This necessary expansion is occurring on a listed waterway and is a testament to what can be achieved by constructive cooperation between communities and environmental organizations with quality stream data.

The DRSCW has met with state officials to initiate discussions regarding the return of a portion of the National Pollution Discharge Elimination System Fees (NPDES) to the watersheds of their origin. A portion of these fees, paid by local agencies, are used for general fund obligations by the state. It is the DRSCW's position that returning these fees to facilitate water quality improvements at a watershed level would offset larger future spending by local agencies. Future newsletters will keep you informed of the progress towards this goal.

The DRSCW's bi-monthly meetings will now be offering one professional development hour for licensed professional engineers, in accordance with the administrative code for the Illinois Department of Financial and Professional Regulation.

As a final note, I would like to thank Dennis Streicher for the commitment and leadership he has provided the Workgroup as President over the past three years. As a result of his commitment the DRSCW has become a model of how a variety of diverse interests can work together to achieve a common goal. — Kevin Buoy, President DRSCW

Churchill Woods Dam Removal

During the winter the 32 acre impoundment at Churchill Woods Forest Preserve on the East Branch of the DuPage River was drawn down as part of the project planning for dam removal. The Churchill Woods project is a cooperative project involving the DRSCW, DuPage County Stormwater Management and the Forest Preserve District of DuPage County. The proposed project involves the removal of what is commonly known as the Churchill Woods Dam, the placement of two upstream riffles, and the restoration of approximately 13 acres of wetland plant communities and approximately 1 acre of mesic prairie.



The purpose of the Churchill Woods dam modification and wetland restoration project is to improve the ecological health of the East Branch by altering the existing dam. Project goals include elevating dissolved oxygen (DO) levels, restoring native wetland plants, improving fish and macro-invertebrate communities and eliminating barriers to fish and mussel dispersion.

The project will remove the Churchill Woods Dam and install a temporary reinforced riffle to control the water surface elevation upstream of Crescent Boulevard. The two permanent rock riffles will be installed approximately 2,000 ft upstream of the dam. Each permanent riffle will have a top of rock elevation below the existing normal water level in the impoundment. The southern riffle will also be designed with a thirty-foot wide low flow notch to maintain a defined baseflow path. The riffles have been designed to avoid any temporary or permanent direct impacts to the adjacent wetlands.

The dam modification will result in a smaller impoundment downstream of the riffles. Upstream of the permanent riffles, the normal water level will be reduced, exposing some areas that are currently submerged. Approximately 9 acres along the north and south banks of the East Branch downstream of the proposed riffles will be exposed. These banks will be stabilized with native vegetation to prevent bank erosion. The lower reaches of the existing impoundment (downstream of the riffles) will in the first phase remain a pooled area, preserving the existing islands. The temporary riffle will be removed at a later stage restoring the southern part of the impoundment.

All areas with less than 6 inches of water depth at base flow will be planted with various types of wetland vegetation to prevent bank erosion. Work is due to begin on the project in 2010. Funding sources for the work include Natural Resource Conservation Service (NRCS), Section 319 funding and DuPage County. — Sarah Ruthko, DuPage County Division of Stormwater Management

New Illinois MS4 Storm Water General Permit

Green Infrastructure Provisions

Is Your Municipality Thinking Outside the Pipe?
Hal Sprague¹

In February 2009, the Illinois Environmental Protection Agency (IEPA) issued a revised storm water general permit, known as ILR40 or the Illinois “MS4 Permit”.² The revised permit requires the adoption of “green infrastructure” (GI) storm water management techniques, which favor natural soil infiltration, plant uptake and harvesting of storm water. In comparison to conventional storm water management systems, GI can be less expensive to implement and provides many additional benefits to the community. Here we describe some of the MS4 Permit revisions that incorporate GI concepts and identify some guidance resources. New GI requirements are contained primarily in the “minimum control measures” set forth in Sections IV.B.1. and IV.B.5. of the Permit, as follows:



1. Public education and outreach on storm water impacts

Each permittee must “incorporate into its education materials information about green infrastructure strategies such as green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells and permeable pavement, that mimic natural processes and direct storm water to areas where it can be infiltrated, evapotranspired or reused, discuss the benefits and costs of such strategies and provide guidance to the public on how to implement them...” The U.S. Environmental Protection Agency (USEPA) website, “Managing Wet Weather With Green Infrastructure”,³ provides a wealth of information for municipalities about GI and guidance on how to incorporate it into local policies and regulations.

5. Post-construction storm water management in new development and redevelopment

This section contains several new requirements for municipalities to use GI in their storm water management programs. For example, Section IV.B.5.a. now requires that all new projects incorporate GI strategies to the maximum extent practicable; Section IV.B.5.b. specifically requires the use of a priority scheme for incorporating GI in site design; Section IV.B.5.c. requires that municipal permittees utilize GI “to minimize the volume of storm water runoff and pollutants from public highways, streets, roads, parking lots and sidewalks (public surfaces);” and Section IV.B.5.d. requires municipal programs to address runoff from “existing privately owned developed property” using GI.

To ensure that municipal staff are equipped to implement these new GI requirements, each permittee is required to provide training in “current green infrastructure techniques” to all employees involved in the routine maintenance, repair or replacement of public surfaces. All contractors who perform these tasks must also be trained in GI techniques. It would seem obvious that all employees who review and approve development projects applications should also receive appropriate GI training. USEPA’s “Municipal Handbook” offers useful strategies for compliance with this requirement. See <http://cfpub.epa.gov/npdes/greeninfrastructure/munichandbook.cfm>.

The incorporation of GI requirements into the MS4 general permit is a major change. To comply with the revised permit, municipal permittees will have to educate themselves, their contractors and their communities on GI practices. We recommend that municipal staff review the federal and state websites referenced in this article for further guidance.

¹ Hal Sprague is a Senior Policy Associate at the Center for Neighborhood Technology (CNT) in Chicago, Illinois. This article was supported by a grant from the Joyce Foundation. To view the entire publication visit: <http://www.cnt.org/repository/MS4-article.pdf>

² Additional information on the MS4 general permit and related documents may be found on the Illinois EPA’s website for MS4 permits at: <http://www.epa.state.il.us/water/permits/storm-water/ms4.html>.

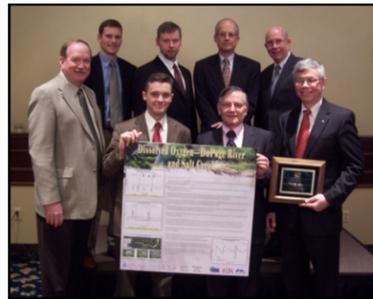
³ http://cfpub.epa.gov/npdes/home.cfm?program_id=298

ACEC Award for the DRSCW

DRSCW and its contractors were presented with an Honor Award from the American Council of Engineering Companies of Illinois (ACEC-IL), for the Dissolved Oxygen Feasibility Study for the East Branch DuPage River and Salt Creek. This project won the Studies, Research and Consulting category.

The studies are the culmination of three years of intensive data collection and include computer generated models for each river. Both studies identified areas of low dissolved oxygen (DO) and determined increased treatment at WWTPs would be ineffective and expensive. The most cost effective proposals, removal/ modification to numerous low-head dams, would not only increase DO levels but also improve water quality, aquatic habitat, and fish passage. As identified in the East Branch study, the Churchill Woods Dam will be removed later this year.

Accepting the ACEC-IL Honor Award at the 39th Annual Awards Luncheon are front row (left to right): Gary Wilken, HDR; Stephen McCracken, DRSCW; Jim Huff, Huff & Huff, Inc.; Michael Klingner, President of ACEC-IL and back row (left to right) Andrew Selle, Inter-Fluve, Inc; Matthew Cochran, HDR; Larry Cox, DRSCW; and Dennis Streicher, DRSCW.



Battling Winter Weather with Modern Snowfighting Technology

Today we depend on salt and other chemicals to keep roadways open and safe during winter snow and ice storm emergencies. While salt is the deicer of choice for its quick action, economical cost and ease of use (more than 40% of dry salt produced in the United States is used for highway deicing) a myriad of other snow and ice melting products have been developed in recent years. Salting employs two primary strategies: (1) traditional deicing: applying dry salt or prewet salt to remove snow and ice bonded to the roadway surface, a reactive strategy; (2) anti-icing: applying salt prior to the formation of a bond between ice and the roadway, by spraying brine onto dry pavement or applying a prewetted solid, a pro-active strategy.



Anti-Icing Strategies

Anti-icing measures take place before snow falls and ice forms on the roadway. Anti-icing prevents the bond of frozen precipitation to the road surface, returns pavement surface to normal quickly, and speeds the melting process. Liquid brine doesn’t scatter like granular materials so the applied material is concentrated in the traffic lanes. Anti-icing products available include sodium chloride, calcium chloride, magnesium chloride, potassium acetate, and calcium magnesium acetate. Each product has advantages and disadvantages. The most common material used is sodium chloride (salt) brine, a mixture of rock salt and water. Liquid sodium chloride (NaCl) is the most effective choice for anti-icing above 15° F. Salt Institute data shows that sodium chloride melts ice at temperatures down to its eutectic point of -6° F (-21° C) under controlled lab conditions. The important variable is pavement, not air temperature. Pavement is often warmer than the air.

Calcium or magnesium chloride in a brine solution is effective at lower temperatures, but is more expensive than salt. Some evidence indicates calcium and magnesium chloride residue on road surfaces can attract moisture at lower relative humidity that may result in dangerous, slippery conditions under certain circumstances. In these cases, combination unit applicators may be needed to apply topical granular material to the treated area to provide traction in the first hours of the storm event. New equipment has been developed which utilizes an on-board grinding process to reduce granular salt to a smaller, flaked particle which can be pre-wet with liquid brine. This reduces overall salt usage by up to 25% and speeds the melting process.

Handling and Storage

Handling and storage of road salt is straightforward. Salt can be lost to precipitation. Storage piles should never be left exposed to rain or snow. A permanent under-roof storage facility is best to prevent salt loss, lumpiness, and stream contamination. Budgets must consider this critical step to protect both the environment and salt supplies. — Rick Michalowski, Monroe Trucking

A First in Illinois

Several DRSCW Board members attended the groundbreaking ceremony for the Village of Itasca’s new Wastewater Treatment Plant in November 2009. Many thought it impossible to expand the discharge, as the plant’s wastewater effluent outfall is Salt Creek, a 303(d) listed waterway. The plan to bring Itasca’s state of the art facility to fruition took a decade of planning and negotiation, and gained some surprising supporters. At the outset of this process, the Village of Itasca invited environmental groups to become planning partners. DRSCW provided impartial continuous dissolved oxygen and comprehensive bio assessment data to Itasca and its partners. The data indicated no strong relationship between effluent outfall and aquatic communities. The plant expansion would increase capacity, while maintaining or reducing the concentration of pollutants in the Village’s wastewater effluent. The Village will also enact bans on phosphorous based fertilizers and coal tar based sealants on village owned property. Their engineering consultants, Baxter & Woodman, Inc. worked to reach consensus with their environmental partners, which led to a joint letter to the Illinois Environmental Protection Agency supporting Itasca’s plans for expansion.



This is the first time in Illinois that a permit for a new treatment plant has been approved on a 303(d) listed waterway. Congratulations to our agency member, the Village of Itasca, and our associate members Baxter Woodman, Inc., Sierra Club, Prairie Rivers Network, the Salt Creek Watershed Network, The Environmental Law and Policy Center and The Conservation Foundation, for a job well done! — Steve Zehner, Baxter Woodman, Inc.