MINNESOTA ASSOCIATION OF WATERSHED DISTRICTS, INC
Land and Water Shall be Preserved

2020 VIRTUAL ANNUAL CONFERENCE

2020 MAWD Annual Conference

Tuesday, Dec 01 **08:30 AM - 10:15 AM**

Pre-Conference Drainage Workshop: Welcome, Background and History, Roles and Responsibilities

Welcome, Background and History, Roles and Responsibilities

Pre-Conference Drainage Workshop

Al Kean

Craig Austinson
Blue Earth County

Emily Javens
Executive Director, Minnesota Association of Watershed Districts

Merissa Lore
Drainage Manager, Faribault County

Welcome, Background and History, Roles and Responsibilities

Tuesday, Dec 01 **10:20 AM - 11:20 AM**

Pre-Conference Drainage Workshop: Project and Repair Proceedings

Drainage Project Proceedings and Petitioned repair Proceedings

Pre-Conference Drainage Workshop

Chris Otterness
Principal / Project Manager, Houston Engineering

Chuck Brandel
Vice President, ISG

Tuesday, Dec 01 **11:30 AM - 12:30 PM**

Pre-Conference Drainage Workshop: Authorities, Jurisdiction, Records and Law

Authorities, Jurisdiction, Records and Law

Pre-Conference Drainage Workshop

Emily Javens
Executive Director, Minnesota Association of Watershed Districts

Kale Van Bruggen
Attorney, Rinke Noonan Attorneys at Law

Myron Jesme
Administrator, Red Lake Watershed District

Authorities, Jurisdiction, RecordsDue Process in Drainage LawClosing and Next Steps

Tuesday, Dec 01 **01:00 PM - 03:00 PM**

Pre-Conference Financing Watershed Workshop: Part 1

Pre-Conference Financing Watershed Workshop

Andy Henschel

Emily Javens
Executive Director, Minnesota Association of Watershed Districts

Margaret Johnson

Mark Doneux
Administrator, Capitol Region Watershed District

Tera Guetter
Administrator, Pelican River Watershed District

WelcomeProject Tax LeviesSales Tax OptionWater Managment DistrictsBonding

Tuesday, Dec 01 **03:15 PM - 04:45 PM**

Pre-Conference Financing Watershed Workshop: Part 2

Pre-Conference Financing Watershed Workshop

Emily Javens
Executive Director, Minnesota Association of Watershed Districts

3:15   Lessard SAMS Outdoor Heritage Council   3:45   Regional Conservation Partnership Program   4:15   Miscellaneous 103D Options   4:45   Closing

Wednesday, Dec 02 **01:00 PM - 01:30 PM**

Implementing Groundwater Management Planning into Watershed Plans

Watershed Management Strategies

Stu Grubb
Senior Hydrogeologist, Emmons & Olivier Resources, Inc.

Watershed Management Plans focus on surface water even though over 90% of the water in the watershed is groundwater! Monitoring and understanding groundwater is key to managing flooding issues and groundwater dependent natural resources (cold water streams, lakes, wetlands, and springs). County and state agencies monitor groundwater, but watershed districts also need to play a role. Watershed districts in northern Washington County have been proactive in their approach to monitoring groundwater, understanding groundwater flow, and protecting groundwater dependent natural resources. The complex geology of the area requires different approaches for different areas. After nearly 18 years of monitoring and studying ...

Wednesday, Dec 02 **01:00 PM - 01:30 PM**

Stream Meander Restoration in an Urban Creek

River Restoration

Matt Kocian
Lake and Stream Specialist, Rice Creek Watershed District

Rice Creek was straightened in the early 1900’s for agricultural purposes. Additional channel and floodplain modifications came with the development of the adjacent Twin Cities Army Ammunition Plant. Over the decades, Rice Creek experienced significant bank erosion, which created high sediment loading to downstream Long Lake, an impaired waterbody that suffers from algae blooms. Working with a MN Clean Water Fund Grant, the Rice Creek Watershed District and Emmons and Olivier Resources embarked on a major stream restoration project. The goals of the project were to decrease downstream sediment transport and improve in-stream habitat. In a phased, 3-year project, a ...

Wednesday, Dec 02 **01:00 PM - 01:30 PM**

Climate Change Initiatives in Minnesota and Wisconsin

Climate

Heidi Roop
Assistant Professor, University of Minnesota

Rob Montgomery
Principal Water Resources Engineer and UW College of Engineering Adjunct Professor , Emmons & Olivier Resources, Inc. and UW College of Engineering
The Minnesota Climate Adaptation Partnership is a coalition of university, public, non-profit, and private sector groups organized to support Minnesota’s ability to adapt to a changing climate by sharing information, communicating best practices, and building the capacity of practitioners working on different aspects of climate adaptation. MCAP is the only multi-sector, statewide group working on climate adaptation and is always looking for additional partners and opportunities to help the state respond to a changing climate. The Wisconsin Initiative on Climate Change Impacts is a collaboration of scientists and stakeholders formed as a partnership between UW-Madison and WDNR. In 2020, the ...

Wednesday, Dec 02 **02:00 PM - 02:30 PM**

Phased Project Implementation – Managing Water One Step at a Time

River Restoration

Bennett Uhler
Project Engineer, Houston Engineering, Inc.

Kim Melton
District Technician, Wilkin Soil & Water Conservation District

The Buffalo-Red River Watershed District, in partnership with the MN DNR and the Wilkin Soil & Water Conservation District, is working to restore approximately 9 miles of perennial stream and approximately 340 acres of associated riparian corridor habitat along Whiskey Creek between Breckenridge, MN and Kent, MN. Over the last several decades, significant sediment buildup has occurred within Whiskey Creek which has negatively impacted the habitat by eliminating deeper pools that are required for fish at various stages. In addition, sediment buildup has reduced the hydraulic capacity of the channel leading to breakout flows occurring more frequently. This presentation will ...

Wednesday, Dec 02 **02:00 PM - 02:30 PM**

Balancing Flood Damage Reduction and Water Quality Needs in the Red River Basin of Minnesota

Watershed Management Strategies

Robert Sip
Executive Director, Red River Watershed Management Board

The Red River Watershed Management Board (RRWMB) has provided funds for approximately 60 Flood Damage Reduction (FDR) projects in the Red River Basin of Minnesota since 1976. In 2020, the RRWMB approved its first ever Strategic Plan and water quality is one of seven priorities of the Plan. In 2020, the RRWMB approved a Water Quality Program to provide Base Funding and Competitive Funding to its member watershed districts. The RRWMB currently has 11 FDR and 9 water quality projects in various phases of permitting, design, engineering, environmental review, and construction. This session will provide information about how the RRWMB ...

Wednesday, Dec 02 **02:00 PM - 02:30 PM**

Changing Climate and Changing Waters: What we must do to save them

Climate

Peter Sorensen
Professor, Unniversity of Minnesota

Nearly a tenth of Minnesotas surface area is water, and it is much more sensitive to climate change than the terrestrial ecosystems that surround it. Even a one- degree increase in temperature can have enormous effects on aquatic life and water quality, especially if winter ice disappears. As the concentration of carbon dioxide in the atmosphere increases causing warming, acidification, and flooding, what can we expect in lakes and rivers and what can we do? This talk will describe how and why water quality can be expected to decrease, while cool-water fish such as walleye will disappear and invasive species ...

Wednesday, Dec 02 **02:30 PM - 03:00 PM**

Moving From One Watershed Planning to Implementation

Watershed Management Strategies

Tara Ostendorf
Watershed & Water Quality Coordinator, Moore Engineering

Completing the 1W1P planning process is only the beginning for the watershed districts, SWCDs, and Counties that have formed a planning partnership. Implementation is where the plan turns into real projects with subsequent progress toward addressing water quality in the watershed. This presentation will focus on the transition from planning to implementation of the 1W1P process. It will explore how to create and foster successful partnerships, why annual prioritization and work plan development are so important, and the benefits of effective tracking and reporting. Ultimately, this presentation will provide you with lessons learned and ideas for getting to Yes, meaning ...

Wednesday, Dec 02 **02:30 PM - 03:00 PM**

If You Build It, They Will Come: A Project Case Study on Pelican River Low Head Dams

River Restoration

Hannah Rollin
Project Engineer, Houston Engineering, Inc.

Watershed Districts throughout the state have an opportunity to improve habitat and wildlife in simple ways by improving fish migration within their watershed. In the early 1900s, eight low head dams were constructed on the Pelican River providing power for milling and managing water levels in upstream lakes. These dams make passage and dispersal of aquatic species difficult or impossible. Once modified to emulate natural rock arch rapids, these projects improve fish passage while also providing fish habitat within the rapids and can be designed to maintain upstream water levels for recreation. The first dam retrofit on the Pelican river ...

Wednesday, Dec 02 **02:30 PM - 03:00 PM**

Where to begin? Identifying and prioritizing flood-risk mitigation projects

Climate

Brandon Barnes
Water Resources Engineer, Barr Engineering

Claire Bleser
District Administrator, Riley Purgatory Bluff Creek Watershed District

Scott Sobiech
Vice President, Barr Engineering Co.

Minnesota’s climate is changing. Rainfall depths and intensity are increasing, causing flooding of previously unidentified areas. Are we prepared for changing rainfall patterns? Have we identified locations of future flooding as a result of climate change? Where do we begin prioritizing flood-risk mitigation projects and building resiliency into our drainage systems? The Riley Purgatory Bluff Creek Watershed District and all of the communities within its boundary are tackling these questions. The RPBCWD recently completed a floodplain vulnerability evaluation to identify flood-risk areas within the watershed, which identified several flood-prone areas. Following the vulnerability evaluation, RPBCWD partnered with the City of ...

Wednesday, Dec 02 **03:30 PM - 04:00 PM**

Urban Meet Rural, Stormwater Management Alternatives for Solar Garden Sites

Special Projects

Paula Kalinosky
Urban Meet Rural, Stormwater Management Alternative for Solar Garden Sites , Emmons and Olivier Resources

Solar gardens seem to be ‘cropping’ up in cornfields everywhere these days, but did you know they usually bring a good length of RCP pipe and other stormwater infrastructure with them? Due to the collective surface area of the panels, solar sites generally trigger the Minnesota construction stormwater permit and local watershed rules. The compliance pathway of least resistance for these sites is often through urban stormwater design standards which are not necessarily the best guidelines given the rural context. EOR has worked on permitting and site design for well over one hundred solar garden sites in Minnesota. In this ...

Wednesday, Dec 02 **03:30 PM - 04:00 PM**

Strategies for Implementing Storage into Publice Drainage Systems

Retention and Drainage Solutions

Bailey Griffin
Graduate Engineer, ISG

Chuck Brandel
Vice President, ISG

With increased rainfall intensity and shifts in agricultural practices, the effects of altered hydrology are clear, as is the need for storage on the landscape. A case study on Blue Earth County Ditch 57 (CD 57) shows successful implementation and continued long-term monitoring of storage through a surge pond, two-stage ditch, and rate-control weir. Getting projects off paper and constructed on the ground can be challenging. The key to effective implementation is coordination and funding sources. To address drainage solutions, failing infrastructure, flooding issues, and water quality concerns of CD 57, ISG had many partners and were successfully awarded $590,000 ...

Wednesday, Dec 02 **03:30 PM - 04:00 PM**

Achieving the Public’s Expectations for Water Quality in Minnesota; A Deliberate Approach Based on on Practical and Achievable Water Quality Goals

Clean Water Fund

Charles Fritz
Executive Director, International Water Institute

Mark Deutschman
Scientist, International Water Institute

Improving the water quality of lakes and rivers is clearly an important priority for Minnesotan’s. Minnesota voters passed the Clean Water, Land and Legacy Act Amendment (Amendment) in 2008 increasing the state sales tax by three-eighth of one percent to fund clean water. Revenue from the Ammendment sales tax is placed into a “Clean Water Fund (CWF)” managed by the State of Minnesota. The CWF receives more than $200 million per biennium. Roughly one-fourth of the revenue ($25 million / year) is actually invested in on-the-ground projects through local governments like Watershed Districts, primarily through grants awarded by the Board ...

Wednesday, Dec 02 **04:00 PM - 04:30 PM**

May I Have Your Attention for Retention?

Retention and Drainage Solutions

Nate Dalager
Water Resources Project Manager, HDR Engineering, Inc.

Retention has been a flood damage reduction strategy in the Red River Basin for many decades. Over the years, many projects have been established that are cumulatively reducing flood damages across the region. This presentation will provide a video and statistical overview regarding the success of past projects, along with a projection of future projects and associated increasing flood damage reduction benefits.

Wednesday, Dec 02 **04:00 PM - 04:30 PM**

Shields Lake Stormwater Reuse and Alum Treatment

Special Projects

Mike Kinney
District Administrator, Comfort Lake-Forest Lake Watershed District

Forest Lake is one of the top recreational lakes in the metro and its water quality impacts downstream waters, including the St. Croix River. Shields Lake, located upstream of Forest Lake, is impaired for excess nutrients and was identified as the single largest contributor of flows/phosphorus loads to Forest Lake’s central basin. CLFLWD impounded water from a drainage ditch to Shields Lake, providing up to 26 million gallons of irrigation water annually, reducing golf course need for groundwater withdrawals. CLFLWD also completed an alum treatment on Shields Lake to bring water quality to state standards and reduce phosphorus loading to ...

Wednesday, Dec 02 **04:00 PM - 04:30 PM**

Clean Water Fund & Council Update

Clean Water Fund

Paul Gardner
Administrator, Clean Water Council

The Clean Water Council recommends how to spend the Clean Water Fund derived from the Legacy Amendment. The Council recently completed its Strategic Plan that will guide its work through 2034, when the amendment expires. Due to the economic downturn, there will be considerably less money in the Clean Water Fund in FY22-23. Administrator Paul Gardner will discuss how the Council, state agencies, and other stakeholders are thinking about prioritization.

Thursday, Dec 03 **12:00 PM - 12:30 PM**

Innovative Solutions Utilizing XPSWMM for Flood Mitigation

Technology Tools

Bailey Griffin
Graduate Engineer, ISG

Jacob Rischmiller
Graduate Engineer, ISG

As a leader in Best Management Practices (BMP) implementation in Minnesota, ISG works on various water resource projects. Many projects require analysis of hydraulic conditions to determine the effects of water elevations, flowrates, and flood extents. XPSWMM delivers simultaneous 1D/2D model allowing for an interactive surface and subsurface model. The 1D/2D modeling enables accurate flood extent comparisons, replacing complicated graphs, charts, hydrographs, and explanations with clear visuals and useful information for clients. Skeptical landowners are swayed to implement conservation practices through the power of XPSWMM to leverage water storage and BMPs. XPSWMM can clearly communicate the added capacity and protection ...

Thursday, Dec 03 **12:00 PM - 12:30 PM**

Planning Large Scale Watershed Projects with Multiple Regulatory Requirements

Complex Project Management

Chad Engels, PE
Senior Project Manager, Moore Engineering

Watershed project development can often be complex in nature and even more so if the project potentially involves multiple statutory elements. Consider the example of the Lake Traverse Water Quality Improvement Project which includes elements of Minnesota Chapters 103D (Watershed District), 103E (Drainage), and 103G (Waters of State). Add into the equation federal 404 permitting requirements, the need for multiple funding sources and landowner cooperation, and the number of moving parts becomes substantial. This presentation will tell the story of a channel stabilization project developed by the Bois de Sioux Watershed District for the purpose of reducing sediment transport to ...

Thursday, Dec 03 **12:00 PM - 12:30 PM**

Raising the Grade: Seeking solutions to improve the health of the Mississippi River Watershed

Partnerships

Kim Lutz
Executive Director, America's Watershed Initiative

In 2015, more than 400 stakeholders from the Missouri, Arkansas, Ohio, Upper and Lower Mississippi Rivers gathered to talk about the health of America’s largest watershed. These discussions led to an analysis of watershed health - the 2015 Mississippi River Watershed Report Card. The Report Card calculated grades for a diversity of indicators including transportation, ecosystems, economies, flood risk, water supply, recreation, gulf hypoxia and wetland loss. Throughout this year, we’ve gathered again to assess and improve our metrics for measuring change and to calculate grades. The 2020 Report Card illustrates a scant few areas where we’ve moved the needle, ...

Thursday, Dec 03 **01:00 PM - 01:30 PM**

Planning Large-Scale Watershed Projects Using Projected Hydrology Demands

Complex Project Management

James Guler, PE
Senior Water Resources Engineer, Moore Engineering

Project design for off-channel impoundments in complex watersheds requires careful consideration of dam safety and future hydrology. Learn how the County and Watershed District staff worked together through an extensive master planning and alternatives evaluation process to determine desired future upstream conditions and resulting flows. This presentation will provide lessons learned from the planning process that considered many hydrology variables in a subwatershed, including culvert and bridge sizing, agricultural levees, road raises, and future legal ditches, as well as relief for the impoundment from unknown variables. This presentation will illustrate the many variables in project design and the methods used ...

Thursday, Dec 03 **01:00 PM - 01:30 PM**

Improve Remote Collaboration while Lowering Costs: A Case Study in Prioritization and Targeting using Open Source Software

Technology Tools

Bryan Pynn
Watershed Restoration Specialist, Washington Conservation District

Michael Talbot
Water Resources Engineer, Emmons & Olivier Resources, Inc.

Mike Isensee
District Administrator, Carnelian-Marine-St. Croix Watershed District

In our new normal of working remotely, it has never been more important – and more difficult – to facilitate efficient collaboration. The Carnelian-Marine-St. Croix WD utilized Emmons and Olivier Resources to employ open source software solutions to make GIS data more accessible to collaborators both inside and outside the organization without amassing additional licensing fees. Using only free software and low-cost cloud services, CMSCWD has been able to develop complex GIS workflows all while keeping data highly accessible via both desktop GIS and web mapping applications. A case study will be presented highlighting a GIS-based pollutant delivery assessment that ...

Thursday, Dec 03 **01:00 PM - 01:30 PM**

Delivering a watershed-based public-private partnership to achieve shared goals

Delivering a watershed-based public-private partnership to achieve shared goals

Partnerships

Brad Jordahl Redlin
Program Manager, Minnesota Department of Agriculture, Minnesota Agricultural Water Quality Certification Program

Danielle Isaacson
Program Operations Coordinator, Mn Department of Agriculture

Kristi Pursell
Executive Director, Cannon River Watershed Partnership (CRWP)

The Cannon River Agricultural Collaborative is a public-private partnership focused on improving water quality in the Cannon River watershed. Using each member organizations strengths and abilities, the Collaborative will support farmers participation in the Minnesota Agricultural Water Quality Certification Program (MAWQCP) to implement farming practices that improve farm profitability, regenerate the soil, and improve water quality. The MAWQCP and the Cannon River Agricultural Collaborative assist farmers in the Cannon River Watershed in assessing, planning, and implementing farming practices that are both economically and environmentally beneficial. This Collaborative serves as a replicable model and strategy for watersheds to address agricultural water ...

Thursday, Dec 03 **01:30 PM - 02:00 PM**

Effective approaches for use of PTMApp in watershed planning and implementation

Technology Tools

Henry Van Offlen
Clean Water Specialist , MN BWSR

Moriya Rufer
Watershed Planner, Houston Engineeering, Inc

Peter Mead
Manager, Becker County SWCD

The Prioritize Target and Measure Application (PTMApp) provides an abundance of water quality related data for watershed planning and implementation. While the amount and diversity of data provides many opportunities, the complexity of the data can make it challenging to distill the information into products that are most useful in planning and implementation. Evolution in use of PTMApp in planning efforts throughout Minnesota has resulted in several common approaches to use this powerful data to set watershed goals, prioritize watershed areas, and to target specific practices to achieve goals. This presentation will give and overview of these different approaches and ...

Thursday, Dec 03 **01:30 PM - 02:00 PM**

PTMApp Program Development Update

Permitting

Drew Kessler
Project Manager , Houston Engineering Inc.

Henry Van Offlen
Clean Water Specialist , MN BWSR

Mark Deutschman
Scientist, International Water Institute

Matt Drewitz
Measures and Outcomes Coordinator, MN Board of Water and Soil Resources

The Clean Water Legacy and Accountability Acts created an expectation that Clean Water Funds would be spent on projects that had been prioritized, targeted, and would result in measurable water quality improvements. To support local governments in meeting this expectation, BWSR led the development of The Prioritize, Target, and Measure Application (PTMApp). The original vision for PTMApp was to provide a means for local governments implementing local county and watershed management plans (1W1P) to prioritize, target, and measure outcomes of Clean Water Fund projects. Join this session to learn about recent and upcoming updates to PTMApp that are making progress ...

Thursday, Dec 03 **01:30 PM - 02:00 PM**

U.S. Army Corps of Engineers, St. Paul District Regulatory Program Overview and Updates

Agency Updates

Benjamin Cox
U.S. Army Corps of Engineers

We are proposing to give a brief overview of the Regulatory Program in the St. Paul District. Our program has seen significant changes over the last year, including the Navigable Waters Protection Rule, that have affected its scope and operation in Minnesota. We intend to highlight some of those changes and the proactive steps we have taken to improve customer service. Specific topics would include paperless permit application procedures, internal processes to improve endangered species and historic properties compliance, wetland delineations review procedures, as well as changes to Corps jurisdiction brought by the Navigable Waters Protection Rule. We would welcome ...

Thursday, Dec 03 **02:30 PM - 03:00 PM**

The Water That We Move: Pumps and Pumping of Drainage and Storm Water

Technology Tools

Walter Eshenaur
Events Manager, ISG

With increased rainfall intensity and shifts in agricultural practices, the effects of altered hydrology are clear. In an effort to optimize available water for crops and minimize environmental and economic damage due to flooding, options are needed to move water on and off landscapes. Pumping stations are becoming a popular option as an integrated solution. We will present a bit of pump theory that operators can use to troubleshoot issues and discuss what goes into pump selection and lift station design. Finally, we will talk about common pump and pump station operation and maintenance issues, why they might arise, and ...

Thursday, Dec 03 **02:30 PM - 03:00 PM**

Success, failures and evolution of a Low Impact Development (LID) precedent

Urban Projects

Kevin Biehn
EOR

The Amery Medical Center opened a new western Wisconsin facility in 2007. The hospital set out to promote human health and wellness through an ecologically enhancing and engaging environment. The resulting landscape has created a synergy between the hospital, the adjacent Apple River and the greater Amery community. The project has served as a regional precedent for LID and many green infrastructure components including ½ acre green roof, porous pavement and bioretention. After almost a decade of operation, this evaluation provides an unique perspective on the success, failures and evolution of a Low Impact Development (LID) precedent as detailed by ...

Thursday, Dec 03 **02:30 PM - 03:00 PM**

A Regional Scale Stormwater Treatment and Research Facility

A success story of partnership and collaboration

Research and Studies

Udai Singh

The St. Anthony Regional Stormwater Treatment and Research System uses a combination of technologies to treat stormwater from a 600-acre ultra-urban sub-watershed near the border of the Minneapolis and St. Anthony Village. Keeping the long-term monitoring of the system effectiveness in the forefront of project goals, the system was designed to allow researchers to easily plug in new and emerging treatment technologies to test their effectiveness in removing pollution from stormwater runoff in this highly urbanized area.Through the partnership and collaboration of multiple organizations and expertise of the monitoring staff at Mississippi Watershed Management Organization (MWMO), the facility allows for ...

Thursday, Dec 03 **03:00 PM - 03:30 PM**

Capitol Region Watershed District (CRWD) 2020-2025 Diversity Equity and Inclusion Plan

Outreach and Inclusion

Belinda Gardner
Diversity Equity and Inclusion Coordinator, Capitol Region WD

CRWD serves a highly diverse population of residents. Between 2000 and 2015, the percentage of people of color in the City of Saint Paul, which comprises 85% of the District, increased from 36% to 46%. The Board and staff acknowledged the need for a more thoughtful and strategic approach to the district’s diversity and inclusion work to better engage all of CRWD’s residents. A Diversity, Equity, and Inclusion (DEI) Plan was developed and approved in 2018. CRWD has learned that to succeed in being a diverse and equitable organization, it is important to hire staff and consultants that reflect the ...

Thursday, Dec 03 **03:00 PM - 03:30 PM**

MN Stormwater Research Council

Research and Studies

Thursday, Dec 03 **03:00 PM - 03:30 PM**

Parkview Center School Filtration BMP: A Case Study for Coordination and Cost Savings

Urban Projects

Nate Zwonitzer
Water Resource Project Manager, Capitol Region Watershed District

Capitol Region Watershed District (CRWD) partnered with Roseville Area Schools to install an underground filtration system at Parkview Center School that captures and treats 12.5 million gallons of polluted runoff each year before it reaches Lake McCarrons. Multiple site constraints made typical stormwater infiltration impossible. Through comprehensive site investigations, a proprietary cartridge filtration system targeting dissolved phosphorous was determined to be the best approach. The system is estimated to remove over 45 pounds of phosphorous per year. BMP monitoring will inform pretreatment and filter maintenance. CRWD’s partnership with the school district provided the needed space for BMP installation and resulted ...

Thursday, Dec 03 **04:00 PM - 04:30 PM**

Stretching Outreach Budgets with Blue Thumb

Wanting to Learn about the complex planning efforts of large capital Improvement Projects that Offer Multiple Benefits? Hear how the Bois de Sioux has done just that.

Outreach and Inclusion

Beth Carreno
Communications and Outreach Coordinator, Rice Creek Watershed District

John Bly
Director of Education and Blue Thumb Programs, Metro Blooms

Watershed districts don’t need to reinvent the wheel when it comes to outreach and education. The Blue Thumb program is a successful private-public partnership that includes watershed districts, communities, and private businesses. Rice Creek Watershed District and other partners stretch their outreach dollars and staff time by utilizing the successful public workshops, consistent messaging, and accessible resources to help residents “plant for clean water.” Blue Thumb was the program identified by the State of Minnesota and the Board of Water and Soil Resources to lead the education and resource components of the current Lawns to Legumes program. This session will ...

Thursday, Dec 03 **04:00 PM - 04:30 PM**

Allianz Virtual Field Tour

Urban Projects

Thursday, Dec 03 **04:00 PM - 04:30 PM**

Planning for Resiliency: Natural Asset Valuation in a Changing World

Research and Studies

Paula Kalinosky
Urban Meet Rural, Stormwater Management Alternative for Solar Garden Sites , Emmons and Olivier Resources

Steve Dodge
Assistant Engineer, City of Inver Grove Heights Public Works

In 2020, EOR conducted a study to help Credit Valley Conservation, a conservation authority in Ontario, support municipalities in recognizing, measuring and managing the stormwater management services of natural heritage systems (e.g. forests) and natural infrastructure (e.g. wetlands). While case studies on natural resources in a municipal stormwater management context are rare, the Northwest Area of Inver Grove Heights, MN presented a unique opportunity to consider the value of natural wetlands. This landlocked area is comprised of rolling terrain that contains over 80 natural depressions. These depressions are maintained in their natural capacity and comprise the backbone of the NWA’s ...